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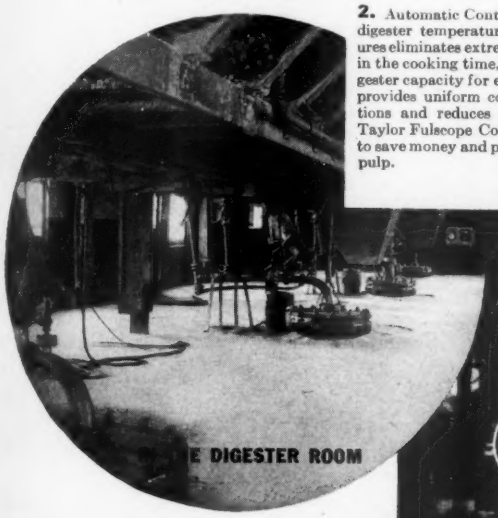

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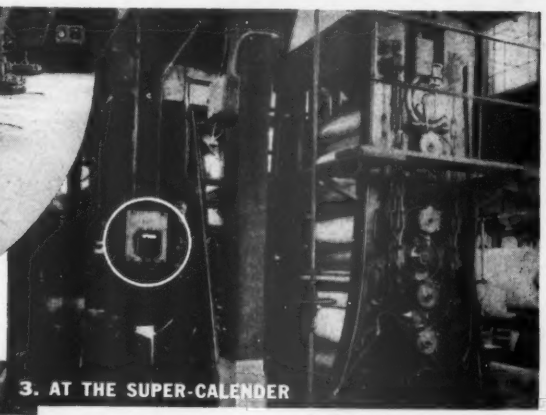
2. Automatic Control of sulphite digester temperatures and pressures eliminates extreme variations in the cooking time, increases digester capacity for each 24 hours, provides uniform cooking conditions and reduces steam costs. Taylor Fulscope Controller helps to save money and produce better pulp.



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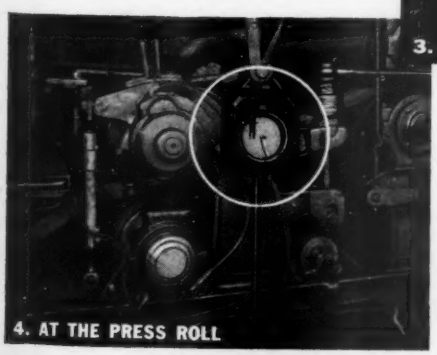

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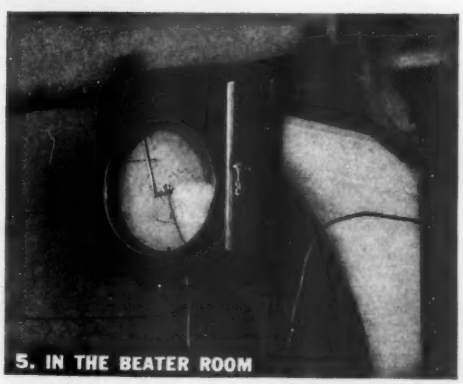
4. Cut paper drying costs, add to press operating efficiency, cut felt cost and improve paper quality by using the Taylor Press-Roll Load Recorder. It enables the operator to maintain a uniform pressure across the entire sheet width.



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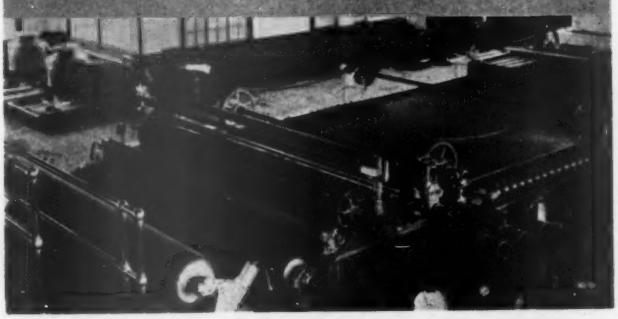

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HARLAN SCOTT
Editor

JOHN E. BROWN
Associate Editor

KEMPER FREEMAN
Production Manager

MILLER FREEMAN, JR.
Circulation Manager

OFFICES

Seattle

PUBLISHING OFFICE
71 Columbia St.
Tel. MAin 1626

Portland

John E. Brown
1220 S. W. Morrison St.
Tel. AT. 8890

San Francisco

Sam Hawkins
121 Second St.
Tel. GA. 5887

Los Angeles

Calvin D. Wood
124 W. Fourth St.
Tel. MUtual 5857

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Pulp and Paper Industry Needs Greater Stability

CHARLES W. BOYCE, Executive Secretary of the American Pulp and Paper Association, in his talk at Portland, June 4th, pointed out the need for greater stability—Progress already made through cooperative effort—The opportunity for further development of pulp and paper production—The growing importance of the Pacific Coast industry in the economics of the world pulp and paper industry*

I WISH that I could bring you word that our current recession in business was drawing toward an end, but I can not. In the East where business conditions are usually exagerated there is yet no bottom to the gloominess. Even the newspaper economists are more than ordinarily confused. They are unable to make up their minds as to what will happen. In fact I am beginning to wonder if many of them have any idea as to what has happened.

Many of us are wondering now as to just how far the deflationary process must go before the bottom will be reached. Eight months ago we felt that a reduction in the inventories of finished goods would be sufficient. Now we are beginning to feel that we must eventually go the whole way, that all values must go through the wringer. Now attention is turning more and more to raw and manufacturing inventories and the deflation of their values.

If this depression must go through in its entirety all of the deflationary process that characterized the last one, we need not expect much improvement for some time to come.

The paper and pulp industry has fared better this time than most other industries. By and large we have lost to date no more than a quarter in production and less than ten per cent on unit mill realizations on sales. Compared with most other industries their record is remarkable. Regardless, however, it leaves much to be desired. Certainly under the circumstances the profit opportunity is greatly reduced if not wiped out entirely and the short time operations have substantially cut into the periodic earning of the industry's workers. Most companies are at or below the breakeven point in their operations. No one in industry can contemplate such a condition with complete equanimity, even though his own position may be somewhat better than that of his neighbors.

I am beginning to suspect that the future will show that we are now going throughh a period of far reaching change in industrial and business relationships. Without attempting to analyze the trends that seem to be in the making, I think the manner with which various industries recovered from the depression of 1932 is sufficient to illustrate the point.

Paper Industry Exceeded 1929

● Few industries have equalled even in 1937 the records of production that were established in 1929 and few industries have been able to make much real progress in lowering the cost of their production. In both these respects the paper industry has set an extra ordinary record. We have beaten our 1929 production peak twice and the average value of paper is today some fifteen per cent lower.

So long as the paper industry possesses such vitality, and this combination of trends is an excellent sign of vitality, we have little to fear in the long run.

I have never ceased to wonder at the records of our industry. It is one of the oldest of all industries. Its products have been in use since the beginning of the Christian Era. Yet, it has retained the vigor and growing possibilities that one naturally associates with young industries. Today we have before us great possibilities of expansion, and this after a century during which our production has swept upward from 3000 tons to over 12,500,000 tons and the national consumption has gone 3,000,000 tons further.

The reason is simple. Paper is the greatest substitution agency among

*Presented by Mr. Boyce before the Joint Meeting of the Pacific Coast Division, American Pulp & Paper Mill Superintendents Association and the Pacific Section of TAPPI, Portland, Oregon, June 4th, 1938.

all material, and it has no substitute. Long ago it burst from the boundaries of the cultured field and found a tremendous demand awaiting it in the physical field. Here no signs of saturation have appeared. The consumption trend reaches constantly upward.

Trend Is Upward

● This was brought forcibly to my attention recently when I reviewed some trends of paper consumption that I had originally prepared in 1930. These trends were extended to indicate what paper consumption might look like in the future on the basis of past performance. Despite the loss of over 20,000,000 tons during the depression, last year's consumption did not miss the trend indication by far. We may yet go on to reach the 25,000,000 ton mark that these trends set for 1950.

The point I want to make is simply that the paper and pulp industry has before it unequalled possibilities and continued development. A long past experience emphatically substantiates this position. What concerns me and I know it concerns you, is the extent to which we can realize upon these possibilities and the character of the realization. Here are presented a long series of problems, many of which can better be characterized as industry rather than company problems.

I will not at this time attempt analysis of these problems, chiefly because I do not know enough about them. We need much more information before we can evaluate them with sufficient accuracy for complete formulation. We certainly need more experience before we can visualize a broad approach to their solutions. Rather what I want to talk about briefly is the goal toward which we might well direct our efforts.

Our Goal—Stability

● With its large capital investments, its slow turn-over and the normally narrow margin between costs and sales realization, the paper and pulp industry needs stability. It needs stability of operation, of market conditions and of material supplies in perhaps a greater degree than any other industry. It can not in any short period of time under any healthy set of conditions, make enough profit to tide it over an extended period of below cost operations. Continuity of profit rather than extent is the criterion of operation in the industry.

Fluctuations in production rate and in prices are especially difficult to reconcile. Because of the long series of factors that are involved, the industry can not take advantage of short market swings. Study of past records indicates clearly that this is so. In fact because of the industry's complicated economic machinery, more often than not it is caught in periods of decreasing consumption with high prices and in periods of increasing consumption with low prices. The industry is organized, on the other hand, in such a way that it must give greater attention to the long term swings and in doing so it can do much to lessen the influence of fluctuations by the technical and economic soundness with which its operations are planned.

After several years of study and observation, I believe that the fundamental principle underlying the industry's success is conservative soundness. The point I want to make today is simply that the industry can realize its greatest benefits in the long run by moving only as sound and complete analysis dictates.

To illustrate: A small boat can, with comparative safety, explore an uncharted bay. Its direction can be changed quickly. It may be stopped almost at an instant, and it probably will not be badly damaged even if it hits a rock. An ocean liner, on the other hand, is an entirely different proposition. No one would think of steaming full blast into any waters that were not thoroughly known.

In more ways than one, the paper industry is like the liner. It is big, it is complicated and its direction can not be easily changed. It is built for steady sailing and under the proper guidance it can go far safely.

Growing Importance of Coast

● The industry here on the Pacific Coast is more than ordinarily involved in the economic structure of the material industry. What is done here is reflected quickly throughout the whole, for an increasingly larger part of the basic fiberous material of the industry is drawn from this region. At times the region may dominate the pulp industry of the world and then that domination influence the quality and price of paper in every large conserving country. This position is more likely to increase rather than decrease in importance, as the production of woodpulp grows.

No one can say that the pulp manufacturers here take this position lightly. They realize all of these things and more. Moreover, last year when pulp prices were running wild, their conservative action did much to keep the whole industry on an even keel. Paper prices did not skyrocket as did the prices of many commodities. We did not therefore have as large an accumulation of stocks as we might have had. In fact it is generally felt that the excess of paper consumption over production during the past eight months has pretty well exhausted abnormal stocks. It is for this reason that many of us feel that regardless of expected business conditions, the production of paper will not fall below an average of 65 per cent of capacity for any extended time.

What might have been the situation if contract prices of pulp had followed spot market prices, we can only surmise. But it is certain that paper prices would have gone up much higher, that consequently the tendency for stocking would have been greater, and by now the industry would have been plunged into a price war comparable with that of 1932.

Various people in the industry attribute the fact that this did not occur for various reasons, principally to the better organization of the industry. I believe this helped, but I also believe that the comparative soundness with which the Pacific coast manufacturers acted played a dominant role.

But we need much more before we can realize upon the possibilities that I am sure lie before the industry. It is in this direction that our organized efforts should be directed, toward soundness in action on the high as well as on the low side.

CHARLES W. BOYCE
Executive Secretary, American Paper & Pulp Association

New Attitude Toward Forests

● It has been a long time since I was in the West. I have tried to keep in touch with developments by reading, correspondence and discussion with those of you who get east. Even so I am amazed at the change that has taken place during the past two decades. I refer especially to the attitude toward the chief resource of the region, its forests. The old idea of quick liquidation of forest resources seems now to be rare. In its place is a well developed movement toward stability of forest use and permanence. Twenty years ago no one dreamed of selective logging in Douglas fir and few indeed were the land owners who considered in any way the fundamental resource of the region, its ability to produce timber. Now wherever I go I hear reference to minus and plus values, restocking and especially to fire protection.

That the paper and pulp industry has played an important part in this change there is no doubt. And it will take an even more prominent part as time goes on. From the point of view of financing permanent forest industry, the paper and pulp industry has what no other wood using industry has and that is large plant investment. The relatitonship of the industry to forestry is far different than is the case in other industries. It makes possible management upon a permanent rather than a liquidation basis. And this is where forestry begins.

In conclusion may I say a word about the organizations of the industry. For the first time in history the industry is organized. Its policy and service agencies are reaching out in the field of industrial self-government. Self-government is no longer the title of an industrialist's speech; it is a living idea that is slowly, too slowly many feel, moving into spheres of real usefulness. With it many conceptions of industry are changing. More and more industry visualizes the possibilities of united action; but few of these have ever been realized. Actually, we are today chiefly engaged in ground work. We haven't yet begun to function as we should or as we must if we wish to avoid governmental regulations.

I know that you can not personally give much time to association work, but you do have time for thought. May I urge, therefore, that in connection with your own work, you devote some of your thinking to the industry of which you are a part. And when you have an idea, tell us who are in the association offices what your ideas are.

Domestic Pulp Prices Reduced

Third Quarter Domestic Contract Prices decline to Resale levels effective June 1st instead of July 1st — Bleached Sulphite now $54 base, Unbleached Sulphite now $45 base and Bleached Soda now $54

● Announcement was made the first of this month that the price structure of domestic wood pulp had been adjusted to conform to the currently quoted prices on resale pulp. Large inventories of pulp still held by paper mills and importers and offered for resale at prices below the second quarter contracts prices of United States pulp mills, was the major factor contributing to the drop in third quarter domestic contract prices.

The new scale of prices went into effect June 1st, a month before the end of the second quarter, and will remain in effect until September 30th.

Domestic bleached sulphite was reduced $5 per ton to $55 ex dock Atlantic seaboard; unbleached sulphite was dropped an equal amount to $45 per ton. Producers of bleached soda pulp for sale dropped their price $4 per ton to $54 delivered to the purchasing mills.

To provide for variations in qualities, differentials were established. Bleached sulphite during the four months from June 1st to September 30th will range from $55 to $59 per ton ex dock Atlantic seaboard, and unbleached sulphite will range in price from $45 to $47 per ton.

The announcement of the new prices, as made in New York City, stated in part, "The hope was expressed that pulp manufacturers abroad, in behalf of converting mills here and of paper prices, will seek to maintain quotations on foreign pulp on the levels announced for domestic pulp, so that no lower market prices will become necessary."

● A few days after the announcement of the price reduction a New York importer was quoted as saying that the lower prices on domestic pulp had not stimulated buying. Quoting this importer's statement as published in the Daily Mill Stock Reporter: "It is something axiomatic in wood pulp that a cut in prices chases buyers away; causes them to wait to see what the reaction may be." And it was said the present case has proven no exception.

However, there has been so little activity in the wood pulp market in recent months the general opinion seems to be that the price reduction neither frightened away buyers nor stimulated purchasing immediately, but that it will contribute toward a more stable market during the next few months.

Dr. Lathrop Resigns As Technical Director

● Dr. E. C. Lathrop resigned the latter part of May as technical director for the entire Crown Zellerbach Corporation to become vice-president of the Celotex Corporation, with offices at 915 North Michigan Avenue, Chicago.

Before joining the Crown Zellerbach Corporation four years ago, Dr. Lathrop was for many years director of research and development for Celotex.

At the time of going to press Dr. Lathrop's successor had not yet been appointed.

Portland Joint Meeting A Great Success

Program pleases large number of mill men in attendance from all sections of Pacific Coast

THE annual Joint Spring Meeting of the Pacific Coast Division of the American Pulp and Paper Mill Superintendents Association and the Pacific Section of TAPPI, held June 3rd and 4th at the Benson Hotel in Portland, Oregon, was one of the best attended of the meetings staged to date.

From a perusal of the registration list of some 155 names it will be noted that operating men and executives came from all sections of the Pacific Coast, from British Columbia to Southern California.

The meeting was also notable by reason of the attendance of two men nationally prominent in the pulp and paper industry; Charles W. Boyce, executive secretary of the American Paper & Pulp Association and Dr. Harold R. Murdock, research director of the Champion Paper & Fibre Company of Canton, North Carolina, and vice-president of the Technical Association of the Pulp & Paper Industry (TAPPI).

The program was in charge of Kenneth B. Hall of Portland, and Mr. Hall, together with the members of his committees and the officers of the two associations, arranged a schedule of work and play which provided a maximum of instruction and entertainment.

Although no business meetings were held until Saturday morning, June 4th, registration opened Friday noon in the lobby of the Benson under the direction of Robert T. Petrie.

● At 1 p.m. Friday the golf tournament opened at the Columbia-Edgewater Country Club under the direction of Don L. Shirley. A large number of men participated in the contest for the fine array of prizes and for the honor of being the first to have his name engraved on the Ohio Knife trophy.

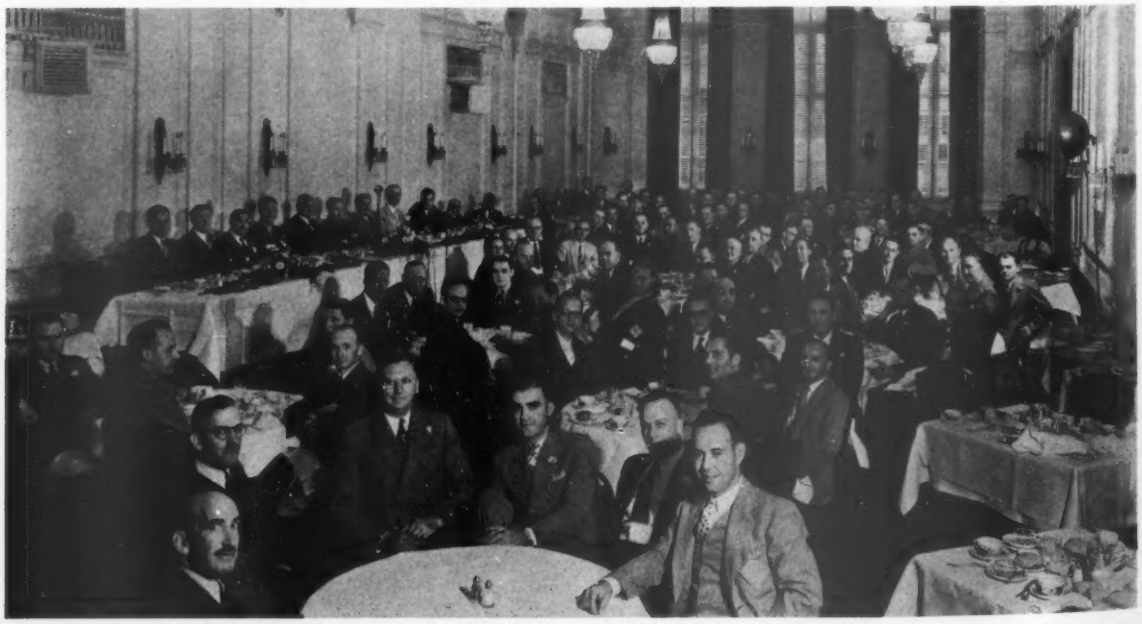
For Friday evening John E. Hassler arranged an informal dancing party in the Oak Room of the Benson which was attended by everyone that had arrived in Portland.

The Breakfast Idea

● Chairman Hall planned an innovation at the meeting, a breakfast Saturday morning at 8:30, to get the business meetings off to an early start.

The breakfast idea proved successful under the toastmastership of Zina A. Wise, president of the Griffith Rubber Mills and a past president of the Portland Breakfast Club. The club's orchestra was on hand and started the breakfast off with music. Mr. Wise opened up with singing and those who had arrived still feeling a bit sleepy began to wake up. Everyone became wide awake when the toastmaster started fining those who came in late, after the 8:30 deadline.

Several professional acts proved highly entertaining and put the men in good spirits for the business meeting at 10 o'clock.



CHARLES W. BOYCE, Executive Secretary of the American Paper & Pulp Association, New York, was the speaker at the luncheon held June 4th at the joint meeting of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association and the Pacific Section of TAPPI.

The Business Session

● First on the business program was an interesting and instructive moving picture, "Beyond the Rainbow," furnished by Heller & Merz and shown through the courtesy of the Pacific Coast Supply Company representatives on the West Coast. William R. Marshall and Ed Tidland of the company were in attendance. The sound moving picture shows in color the complicated manufacture of dyestuffs for all dye using industries, and gave the operating men present an insight into the many steps necessary to produce a seemingly simple paper dye.

The first paper presented was "Measurement of Incrustant Removal from Cellulose Fibers," by George Schmidt of the Pennsylvania Salt Manufacturing Company, of Washington, Tacoma, Washington.

A second paper was offered at the morning session by Jerome P. Strasser of the Stein, Hall Manufacturing Company, Chicago, entitled "The Uses of Starches in the Paper Industry." Both Mr. Schmidt's and Mr. Strasser's papers appear in this number.

The Stag Luncheon

● The stag luncheon Saturday noon drew a large crowd to hear Charles W. Boyce, executive secretary of the American Paper & Pulp Association speak on "The American Paper and Pulp Industry." Mr. Boyce's talk will be found in full in this issue under the title, "Pulp and Paper Industry Needs Greater Stability." At the speaker's table with Mr. Boyce, were: L. S. McCurdy, chairman of the Pacific Coast Division of the Superintendents Association; George H. McGregor, chairman of the Pacific Section of TAPPI; Dr. Harold R. Murdock, vice-president of national TAPPI and director of research for the Champion Paper & Fibre Company; N. W. Coster, newly elected chairman of the Pacific Section of TAPPI succeeding Mr. McGregor; J. V. B. Cox, secretary-treasurer of the Pacific Section of TAPPI; E. W. G. Cooper, first vice-chairman of the Pacific Coast Superintendents; Anton Seibers, second vice-chairman of the superintendents; and, Albert S. Quinn, secretary-treasurer of the Pacific Coast Division of the Superintendents Association.

Mr. McGregor first introduced Dr. Murdock who spoke briefly saying that as vice-president of TAPPI he brought greetings from the national organization to the Pacific Section. Dr. Murdock said he felt right at home in a joint meeting of members of the two associations for he is a member of the Superintendents Association as well. Dr. Murdock stated it was the desire of the executive committee of TAPPI to cooperate closely with the Pacific Section and he urged the members to keep right on showing the national group how to do things by continuing the fine work it has done since its organization.

Mr. Boyce was next introduced by Mr. McGregor. He said D. Clark Everest, president of the American Paper & Pulp Association had asked him to present his greetings to the industry on the West Coast. His talk is published in this number.

TAPPI OFFICERS » » » Officers of the Pacific Section of TAPPI were elected at the meeting in Portland » » » The new chairman is N. W. COSTER (front row center), Technical Director of the Soundview Pulp Co.; WILLIAM T. WEBSTER, General Superintendent of the St. Regis Kraft Co., was elected vice-chairman (front row left); JOHN VAN BRUNT COX, of the Paper Makers Chemical Division of the Hercules Powder Co., Portland, was reelected secretary-treasurer (front row right) » » » Standing are: GEORGE H. McGREGOR, Superintendent of the Longview Mill, Pulp Division, Weyerhaeuser Timber Co., the retiring chairman and now a member of the executive committee; and, on the right, CARL FAHLSTROM, Technical Superintendent of the Longview Fibre Co., member of the executive committee and a past chairman of the Pacific Section.

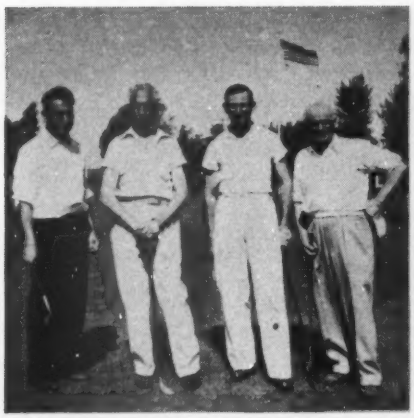
●

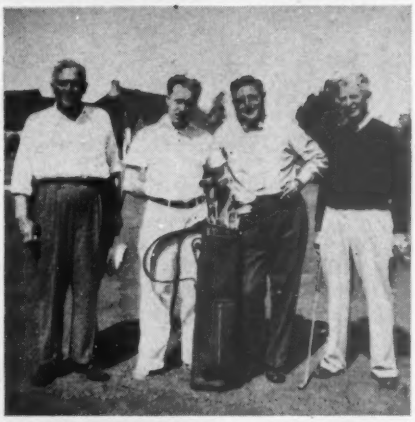
The Round Table

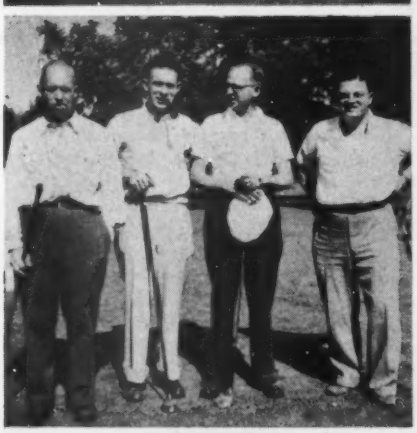
● Always an important feature of the Superintendent's meeting, the round table discussion at Portland developed such momentum that chairman L. S. McCurdy of the Superintendents association had difficulty in stopping it when the time had expired.

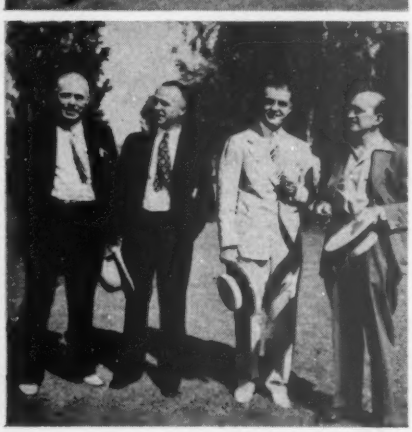
The round table opened with Everett H. Barton of the Pulp Division, Weyerhaeuser Timber Company, Longview, presenting a paper entitled "Past and Present Picture in the Pulp and Paper Industry." Mr. Barton's paper dealt with the analysis and interpretation of available statistical data on the world pulp industry with particular reference to the United States situation. It represented a part of the work done by Mr. Barton under the direction of Robert B. Wolf, manager of the Pulp Division, to evolve a clearer understanding of the economic factors affecting the world pulp industry. It is Mr. Wolf's belief that wood pulp producers throughout the world will act more intelligently if they are fully acquainted with properly evaluated data on the world industry, thereby contributing to greater stability of prices and production. Mr. Barton presented his paper with the aid of large graphs many of which are published in this issue along with his paper.

Discussion followed Mr. Barton's paper in which a number of men present participated including Mr. Wolf. Operating problems came up for discussion through questions previously turned in to Mr. McCurdy and through questions put from the floor.









Mr. McCurdy called upon Albert H. Hooker to lead a discussion of bleaching and this brought many men to their feet to ask and answer questions.

A transcription of the round table discussion will be published in the July number of PACIFIC PULP & PAPER INDUSTRY.

Saturday Evening

● The round table discussion broke up late but it did not end then, continuing on into the evening

●

ON THE GOLF COURSE—

Here are some of the men attending the joint meeting in Portland who competed for the fine array of prizes.

In No 1 appear J. P. STRASSER, Stein, Hall Mfg. Co., Chicago, who presented a paper; B. W. SAWYER of the Foxboro Company; J. C. HOFFMAN of J. O. Ross Engineering; and P. B. KEYES of the Goodyear Rubber & Asbestos Co.

In No. 2 are DON L. SHIRLEY, Chairman of the Golf Tournament and Manager of the Link-Belt Company in Portland; JOHN E. HASSLER, President of the Coast Mfg. & Sales Co.; AL HOOKER of Hooker Electrochemical Co., and CARL FAHLSTROM, Technical Superintendent of the Longview Fibre Company.

No. 3 pictures BLAINE L. KERNS, Westinghouse Electric & Mfg.; KEN L. HOWE of the same company; E. V. YOUNG, Chief Electrician, Columbia River Paper Mills, and H. N. MILLER of Westinghouse.

In No. 4 are W. F. HYNES, General Electric; G. H. McGREGOR, Superintendent Longview Mill, Pulp Division Weyerhaeuser Timber Co.; R. V. MAIER of General Electric, and WALTER MITCHELL of Hesse-Ersted Iron Works.

In No. 5 three out of the four are: HAROLD HAUFF, Pulp Division Weyerhaeuser Timber Co., Longview; FRED ALSOP, Van Waters & Rogers; Z. A. WISE, President, Griffith Rubber Mills.

No. 6: BILL MARSHALL, Pacific Coast Supply Co.; W. A. KELLY, Waterbury Felt Co.; U. GRANT FARMER, Superintendent, Fibreboard Products, Inc., Los Angeles; R. S. PAINTER, U. S. Gypsum Co.

No. 7: J. M. WILCOX, Resident Engineer, St. Regis Kraft Co.; WILLIAM T. WEBSTER, General Superintendent, St. Regis Kraft Co.; D. C. MORRIS, James Brinkley Co., and J. A. WILCOX, Engineer, Longview Fibre Co.

In No. 8 appear some of the gallery watching the tournament: JACK JOHNSON; ERNEST KERTZ, John W. Bolton & Sons; ROY S. CAREY, National Aniline & Chemical Co., and BILL WILLIAMSON, Shuler & Benninghofen.

in small groups throughout the hotel. Arguments were carried into the reception which was held at 6:30 p.m. in honor of Mr. Boyce and of Dr. Murdock, which was held in the Rose Room. Walter S. Hodges of Portland was in charge of the arrangements for the reception.

After the reception more than two hundred attended the dinner dance in the Oak Room where chairman Hall and his committees had arranged an excellent dinner and entertainment program.

Don L. Shirley, as chairman of the golf committee, announced the prize winners which he had kept secret since Friday afternoon despite the urging of many hopeful players who desired to know the winners.

For the best all around performance, low gross score, long drive on No. 10 hole, and for the most birdies, the Ohio Knife gold trophy was awarded to Carl Fahlstrom, technical superintendent of the Longview Fibre Company. This fine trophy was put up for the first time this year and Mr. Fahlstrom is first to have his name engraved upon it. As this year's winner he is privileged to keep it on his mantle until the joint meeting next June. The trophy, presented by Tom J. Waltmon, Northwest manager of Ohio Knife Company, is for competition among the members of the two associations who are mill employes. The winner keeps it for one year but to retain permanent possession he must win it three times. Engraved on the trophy is the following: "The Ohio Knife Company Trophy—To be competed for at the Annual Spring Meeting of the American Pulp and Paper Mill Superintendents' Golf Tournament."

Mr. Fahlstrom also won a Pendleton shirt and a $5 merchandise order.

The low net score was turned in by George H. McGregor, superintendent of the Longview mill, Pulp Division Weyerhaeuser Timber Company, who won a Macmonies golf bag. For the second low gross and most bogey holes, J. A. Wilcox, engineer of the Longview Fibre Company won a Pendleton golf suit. An award of 50 feet of garden hose went to Larry K. Smith, manager of PACIFIC PULP & PAPER INDUSTRY for the high gross score of the tournament.

Blaine L. Kerns of the Westinghouse Electric & Manufacturing Company, Seattle, won a flashlight for the most strokes on a single hole, and Jack M. Wilcox, resident engineer with the St. Regis Kraft Company, Tacoma, won a Pendleton shirt for making the most par holes. A half dozen golf balls went to H. Townes for the longest drive on the No. 1 hole, and W. A. Kelly, of the Waterbury Felt Company, won a vacuum jug for placing his ball nearest to the pin on the No. 2 green.

For being nearest the pin on No. 13 green Al. H. Hooker of the Hooker Electrochemical Company, Tacoma, won a chromium plated faucet. For scores on the hidden holes, three golf balls each went to the following five men; Grant Farmer, superintendent of Fibreboard Products, Incorporated at Los Angeles; William T. Webster, general superintendent of the St. Regis Kraft Company, Tacoma; E. V. Young, chief electrician of the Columbia River Paper Mills at Vancouver, Washington; R. N. Hammond and G. R. McCully of the Pulp Division Weyerhaeuser Timber Company at Longview.

For birdies the following men were awarded two golf balls each: W. C. Marshall, Pacific Coast Supply Company; Z. A. Wise, president of the Griffith Rubber Mills, R. V. Maier, General Electric Company; Carl Fahlstrom of the Longview Fibre Company; and Bob True of the General Dyestuff Company.

Mr. Shirley also awarded the

OFFICERS OF THE PACIFIC COAST DIVISION OF THE SUPERINTENDENTS ASSOCIATION » » » L. S. McCURDY, chairman, is paper mill superintendent of the Port Townsend Division, Crown Zellerbach Corp. (front row right) » » » E. W. G. COOPER, first vice-chairman, is assistant paper machine superintendent of the Crown Willamette Paper Co. Division of Crown Zellerbach Corp. at Camas (front row left) » » » Standing, left, ALBERT S. QUINN, secretary-treasurer of the Pacific Coast Division and Vice-President of the Stebbins Engineering Corp. » » » Standing, right, ANTON SEIBERS, second vice-chairman, paper mill superintendent of the Longview Fibre Co.

At the SPEAKERS' TABLE Saturday evening (but there were no speeches) were, left to right, GEORGE H. McGREGOR, retiring chairman of the Pacific Section of TAPPI; Dr. HAROLD R. MURDOCK, Vice-President of national TAPPI; Mrs. L. S. McCURDY; N. M. BRISBOIS, General Operating Manager of Fibreboard Products, Incorporated; Mrs. G. S. BRAZEAU; CHARLES W. BOYCE, Executive Secretary of the American Paper & Pulp Association; G. S. BRAZEAU, member of the Executive Committee of national TAPPI; Mrs. GEORGE H. McGREGOR; L. S. McCURDY, Chairman of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association; Mrs. KENNETH B. HALL; and, standing, Mr. HALL, General Chairman of the convention.

door prizes. Charles E. Ackley, paper mill superintendent of the Hawley Pulp & Paper Company, won a $10 merchandise order. A $5 merchandise order went to Mrs. Anton Seibers and an electric clock to J. E. Hassler. Mrs. Ray C. Onkels also won an electric clock. An electric broiler was won by Mrs. R. T. Petrie. G. M. Myers, superintendent of Fibreboard Products, Incorporated at Antioch, California, won an electric waffle iron, while Charles G. Frampton, superintendent of the California Fruit Wrapping Mills at Pomona, California, won a set of andirons. Mrs. A. G. Natwick of Camas drew a pair of bronze book ends.

The New TAPPI Officers

● Officers of the Pacific Section of TAPPI are elected at the spring meeting: those of the Pacific Coast Division of the Superintendents association at the December meeting.

N. W. Coster, technical director of the Soundview Pulp Company, Everett, Washington, was elevated to the chairmanship of the Pacific Section of TAPPI for the 1938-1939 year from the position of vice-chairman which he has held this past year. Mr. Coster has been technical director of Soundview since 1934.

Mr. Coster succeeds George H. McGregor, superintendent of the Longview mill, Pulp Division Weyerhaeuser Timber Company, who served this past year.

● During the ensuing year the post of vice-chairman of the Pacific Section will be filled by William T. Webster, general superintendent of the St. Regis Kraft Company, Tacoma. Mr. Webster, as vice-chairman, will have charge of arranging the papers for TAPPI's series of Fall and Winter Dinner Meetings.

● Mr. Webster, the newly elected vice-chairman, is a graduate of the University of Pennsylvania in chemical engineering. Upon graduation, from 1915 to 1917 he was at the Burgess mill of the Brown Company. In the latter year he joined the Chemical Warfare Service of the U. S. Army, serving until 1919 when he was discharged. Mr. Webster then joined the Dill & Collins organization in Philadelphia as a chemist. Later he became assistant manager of the company's Flat Rock mill. In 1924 he was transferred to the Richmond mill as plant engineer, remaining there until 1927 when he became associated with the J. O. Ross Engineering Corporation in the selling and servicing of the Wagner furnace. In August of 1936 Mr. Webster resigned from the Ross organization to become general superintendent of the St. Regis Kraft Company's modernized plant at Tacoma.

● J. V. B. (John Van Brunt) Cox was reelected to serve a second term as secretary-treasurer of the Pacific Section. Mr. Cox is plant superintendent of the Paper Makers Chemical Division of the Hercules Powder Company at Portland.

Mr. Cox has been an active member of TAPPI since 1930, and befor that he was a member of the Kalamazoo Cost and Technical Association, which has since become the Kalamazoo Section of TAPPI. Mr. Cox is a 1920 graduate in chemistry from the University of Wisconsin. Following graduation he entered the mills of the Kimberly-Clark Corporation in Appleton, Wisconsin, and later joined the Appleton Coated Paper Company. Then for a time he was with the Allied Paper Mills in Kalamazoo, leaving to join the Paper Makers Chemical Company in 1926. In 1929 Mr. Cox was transferred to Portland when the Paper Makers Chemical Company (now a Division of the Hercules Powder Company) established its plant in that city to serve the paper industry on the Pacific Coast.

In addition to the above officers the executive committee will consist of George H. McGregor, retiring chairman and Carl Fahlstrom, past chairman of the Pacific Section.

Upon turning over the chairmanship to Mr. Coster, retiring chairman George H. McGregor expressed his appreciation of the loyal cooperation given him by the other officers and members of the Pacific Section.

Ladies Entertainment

● The large number of ladies in attendance at the joint meeting were entertained at a luncheon Saturday which was held at the Columbia-Edgewater Country Club, followed by bridge for those who desired to play. Members of the ladies committee who arranged the luncheon were: Mrs. John E. Hassler, Mrs. James Osborne, Mrs. J. V. B. Cox and Mrs. Kenneth B. Hall.

Committees

● Large and successful conventions such as the one this month in Portland do not just happen. Only those who have worked in organizing a meeting fully appreciate the multitude of details which must be taken care of in order to create a smooth, fast moving successful convention. This means a sacrifice of time as well as a large amount of initiative and hard work. Too much credit can hardly be given to those who contributed their part so that all who attended could return home feeling the meeting had been worthwhile, instructive as well as entertaining.

The papers presented at the meeting were arranged for by Anton Seibers, second vice-chairman of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association and paper mill superintendent of the Longview Fibre Company, and George H. McGregor, chairman of the Pacific Section of TAPPI and superintendent of the Longview mill, Pulp Division Weyerhaeuser Timber Company.

L. S. McCurdy, chairman of the Pacific Coast Division of the Superintendent's Association, arranged the round table discussion and served as chairman of the discussion. Mr. McCurdy is paper mill superintendent of the Port Townsend Division of the Crown Zellerbach Corporation.

● General chairman of the meeting, Kenneth B. Hall, who is Pacific Coast representative for the Improved Paper Machinery Corporation, expressed his personal appreciation to those who gave their time to put the meeting across: Robert T. Petrie, Pacific Coast representative of the Bagley and Sewall Company, Portland, who took charge of registration: Don L. Shirley, manager of the Link-Belt Pacific Company, Portland, who supervised the golf tournament; John E. Hassler, president of the Coast Manufacturing & Sales Company, Portland, who arranged the Friday evening party; Zina A. Wise, president of the Griffith Rubber Mills, Portland, who organized the breakfast and served as toastmaster; Walter S. Hodges, Pacific Coast representative of the Appleton Wire Works, Asten-Hill Manufacturing Company and the Orr Felt Blanket Company, who had charge of arrangements for the reception; and, last but not least, to the ladies commitee mentioned above for their entertainment of the ladies attending the meeting.

The notebooks which the men found ready for them at the round table discussion were furnished by the Hawley Pulp & Paper Company, through the courtesy of Carl F. Braun, vice-president and mill manager.

Following is a list of those who registered at the Portland joint meeting:

NATIONAL TAPPI OFFICERS AT THE PORTLAND MEETING » » » Left to right, DR. HAROLD R. MURDOCK, Vice-President of TAPPI and Research Director of The Champion Paper and Fibre Co., Canton, North Carolina; ALBERT BANKUS, member of the Executive Committee of national TAPPI and Vice-President of the Crown Zellerbach Corporation; and G. S. BRAZEAU, member of the Executive Committee of national TAPPI and Manager of the Everett Mill, Pulp Division, Weyerhaeuser Timber Co.

● Mr. and Mrs. Fred E. Alsop, Van Waters & Rogers, Portland; K. M. Ackles, Corn Products Sales Co., Portland; Mr. and Mrs. Chas. E. Ackley, Hawley Pulp & Paper Co., Oregon City; Tone Ahlen, Svenska Flaktfrabriken, Stockholm, Sweden; Mr. and Mrs. G. F. Alcorn, Weyerhaeuser Timber Co., Everett; Leslie Anderson, Weyerhaeuser Timber Co., Pulp Division, Longview.

● Mr. and Mrs. B. A. Bannan, Western Gear Co., Seattle; W. R. Barber, Crown Zellerbach Corp., Camas; E. H. Barton, Weyerhaeuser Timber Co., Pulp Division, Longview; C. M. Barr, Cavin, Marshall & Barr, Seattle; S. B. Biddle, Jr., Leeds and Northrup Co., San Francisco; Mr. and Mrs. G. S. Brazeau, Weyerhaeuser Timber Co., Pulp Division, Everett.

● Albert Bankus, Crown Zellerbach Corp., San Francisco; Mr. and Mrs. Chas. Belvin, Chromium Corp., Portland; C. W. Boyce, Executive Secretary, American Pulp & Paper Association, New York; Martin Breuer, Du Pont Company, San Francisco; Richard S. Buckley, Weyerhaeuser Timber Co., Pulp Division, Everett.

● Mr. and Mrs. Carl E. Braun, Hawley Pulp and Paper Co., Oregon City; Mr. and Mrs. J. E. Brown, Pacific Pulp and Paper Industry, Portland; M. M. Brisbois, Fibreboard Products, Stockton; Robert E. Bundy, Fibreboard Products, Port Angeles; R. S. Carey, National Aniline & Chemical Co., Portland.

● E. W. G. Cooper, Crown Willamette Paper Co., Camas; Mr. and Mrs. J. V. B. Cox, Hercules Powder Co., Portland; L. C. Culver, Corn Products Sales Co., San Francisco; John M. Carlson, Soundview Pulp Co., Everett; C. H. Carruthers, Powell River Co., Powell River, B. C.; O. S. Cauvel, Washington Pulp & Paper Co., Port Angeles.

● Mr. and Mrs. Harold Cavin, Cavin, Marshall & Barr, Bellingham; Mr. and Mrs. N. W. Coster, Soundview Pulp Co., Everett; E. F. Clark, L. H. Butcher Co., Seattle; H. A. Des Marais, General Dyestuff Corp., San Francisco; J. R. Draudt, H. T. McCluskey & Sons, Portland; Robert A. Diehm, Rohm & Hass Co., Inc., Philadelphia.

● R. E. Drane, St. Helens Pulp & Paper Co., St. Helens; Mr. and Mrs. A. C. Duncan, Hercules Powder Co., Portland; A. C. Dunham, Griffith Rubber Mills, Portland; U. Grant Farmer, Fibreboard Products, Inc., Los Angeles; Mr. and Mrs. E. T. Flateboe, Sumner Iron Works, Everett; Mr. and Mrs. Carl Fahlstrom, Longview Fibre Co., Longview.

● C. G. Frampton, California Fruit Wrapping, Pomona; Keith Frampton, St. Helens Pulp and Paper Co., St. Helens; W. R. Gibson, Northwest Filter Co., Seattle; Don H. Guild, Huntington Rubber Co., Seattle; Geo. A. Gladding, Soundview Pulp Co., Everett; Mr. and Mrs. L. T. Graham, Link Belt Co., Seattle.

● T. H. Grant, Columbia River Paper Mill, Vancouver; Harold G. Griep, Weyerhaeuser Timber Co., Pulp Division, Everett; H. Gevers, Longview Fibre Co., Longview; Mr. and Mrs. Carl Gaiser, Crown Willamette Paper Co., Portland; Mr. and Mrs. Kenneth B. Hall, Improved Paper Machinery Corporation, Portland; Mr. and Mrs. John Hassler, Coast Manufacturing & Sales Co., Potrland.

● Mr. and Mrs. H. A. Hauff, Weyerhaeuser Timber Co., Pulp Division, Longview; Mr. and Mrs. W. S. Hodges, Appleton Wire Works, Portland; G. W. Houk, Hooker Electro-Chemical, Tacoma; W. F. Hynes, General Electric Co., Portland; Mr. and Mrs. R. S. Hatch, Weyerhaeuser Timber Co., Longview; R. N. Hammond, Weyerhaeuser Timber Co., Research Dept., Longview.

● Dr. W. Hirschkind, Great Western Electro-Chemical Co., Pittsburg, Calif.; A. H. Hooker, Hooker Electro-Chemical Co., Tacoma; O. L. Hudrlik, The Flox Co., Portland; Mr. and Mrs. Chas. F. Humble, J. E. Berkheimer Co., Tacoma; Mr. and Mrs. J. G. Hoffman, Ross Engineering Co., Portland.

● Mr. and Mrs. Ray C. Hansen, National Tank and Pipe Co., Portland; Harry M. Jones, Ohio Knife Co., Seattle; Lester M. Johnson, Weyerhaeuser Timber Co., Longview; G. N. Julien, Crown Willamette Paper Co., Camas; W. D. Jorres, L. H. Butcher Co., Portland; Mr. and Mrs. W. A. Kelly, Waterbury Felt Co., Portland.

● Stig Kempe, Guest of Weyehaeuser Timber Co., Longview, Wash., Stockholm, Sweden; Mr. and Mrs. E. E. Kertz, John W. Bolton & Sons, Portland; Mr. and Mrs. W. N. Kelly, Weyerhaeuser Timber Co., Pulp Division, Longview; B. L. Kerns, Westinghouse Electric & Mfg., Seattle; Louie Lang, Portland; R. V. Maier, General Electric Co., Portland.

● Mr. and Mrs. L. S. McCurdy, National Paper Products Co., Port Townsend; Mr. and Mrs. G. H. McGregor, Weyerhaeuser Timber Co., Longview; L. McLeod, Simonds Saw & Steel Co., Seattle; Mr. and Mrs. C. M. Meyers, Fibreboard Products, Inc., Antioch, Calif.; Mr. and Mrs. H. O. Meyers, Fibreboard Products, Inc., Sumner; Mr. and Mrs. C. W. Morden, Morden Machine Co., Portland.

● Mr. and Mrs. D. C. Morris, James Brinkley Co., Seattle; Mr. and Mrs. H. L. Marshall, Cavin, Marshall & Barr, Bellingham; Mr. and Mrs. Wm. C. Marshall, Heller & Merz, Portland; C. R. Martin, Schorn Paint Mfg. Co., Portland; Jack Martin, Schorn Paint Mfg. Co., Seattle; W. E. Major, General Chemical Co., San Francisco.

● J. H. McCarthy, Soundview Pulp Co., Everett; C. R. McCully, Weyerhaeuser Timber Co., Research Dept., Longview; Mr. and Mrs. F. W. McKenzie, Webster-Brinkley Co., Seattle; G. F. Mitchell, Hesse Ersted Iron Works, Portland; Walt Mitchell, Hesse Ersted Iron Works; Portland; A. E. Montgomery, J. O. Ross Engineering Corp., Chicago; B. W. Moore, Consolidated Supply Co., Portland.

● H. R. Murdock, Champion Paper and Fibre Co., Canton, N. Carolina; H. Norman Miller, Westinghouse Electric Co., Portland; J. B. Martin, Jr., Fibreboard Products, Potland; B. T. McBain, Pulp and Paper Consultant, Portland; N. Menzies, W. S. Tyler Co., Seattle; C. J. McAllister, Coast Manufacturing & Sales, Portland.

● Mr. and Mrs. E. J. McGill, Rayonier Incorporated, Fernandina, Florida; S. Norman, General Iron and Steel Co., Portland; Fred Nicholson, Stetson-Ross Mach. Co., Seattle; Mr. and Mrs. M. Norwood, Columbia River Paper Mills, Vancouver, Wash.; Mr. and Mrs. A. G. Natwick, Crown Willamette Paper Co., Camas.

● Mr. and Mrs. R. C. Onkles, New Westminster Paper Co., New Westminster, B. C.; Mr. and Mrs. J. M. Osborne, General Chemical Co., Portland; F. Odom, Hawley Pulp and Paper Co., Oregon City; R. S. Painter, U. S. Gypsum Co., Portland; F. M. Pape, Wilson and Geo. Meyer, Seattle; Mr. and Mrs. R. T. Petrie, Bagley and Sewell Co., Portland; Mr. and Mrs. W. A. Prier, Oregon Brass, Portland; Mr. and Mrs. C. D. Parker, The Fafner Bearing Co., Seattle; Paul Pittenger, Weyerhaeuser Timber Co.; Everett.

● Mr. and Mrs. A. S. Quinn, Stebbins Engineering Corp., Seattle; H. H. Richmond, Electric Steel Foundry, Portland; James Ruck, St. Regis Kraft Co., Tacoma; Mr. and Mrs. H. R. Russell, Everett Pulp and Paper Co., Everett; Mr. and Mrs. Chas. M. Server, Appleton Woolen Mills, Portland; Mr. and Mrs. S. A. Salmonson, Soundview Pulp Co., Everett; B. W. Sawyer, The Foxboro Co., Portland.

THE LADIES ATTENDING the joint meeting of the Pacific Coast Division of the American Pulp & Paper bridge at the Columbia-Edgewater Country Club Saturday, June 4th.

●F. C. Shaneman, Penn Salt, Tacoma; D. L. Shirley, Link Belt Co., Portland; Leo Spier, Stein Hall Co., Inc., San Francisco; Jerry P. Strasser, Stein Hall Co., Inc., Chicago; Mr. and Mrs. W. A. Salmonson, Coast Mfg. and Sales, Seattle; F. V. Sams, Allis Chalmers, Portland; Mr. and Mrs. Harlan Scott, Pacific Pulp and Paper Industry, Seattle; Mr. and Mrs. B. L. Shera, Pennsylvania Salt Mfg. Co., Tacoma.

● Mr. and Mrs. A. P. Seibers, Longview Fibre Co., Longview; Larry Smith, Pacific Pulp and Paper Ind., Seattle; Mr. and Mrs. C. Sholderbrand, Hawley Pulp and Paper Co., Oregon City; Larry Supove, Electric Steel Foundry, Portland; Geo. Spencer, Hawley Pulp and Paper Co., Oregon City; H. H. Townes, Federated Metal Division American Smelting & Refining, Portland.

● Mr. and Mrs. R. M. True, General Dyestuff Corp., Portland; Mr. and Mrs. James Turek, Stein Hall Co., Inc., Portland; Mr. and Mrs. Earl G. Thompson, Great Western Electro Chemical, Seattle; Mr. and Mrs. V. L. Tipka, Hawley Pulp and Paper Co., Oregon City; E. H. Tidland, Pacific Coast Supply, Portland; H. A. Verner, A. E. Staley Mfg. Co., Decator, Ill.

● Mr. and Mrs. W. T. Webster, St. Regis Kraft Co., Tacoma; J. M. Wilcox, St. Regis Kraft Co., Tacoma; Mr. and Mrs. F. P. Wilder, H. Waterbury & Sons, Portland; Bill Williamson, Shuler Benninghofen, Hamilton, Ohio; Z. A. Wise, Griffith Rubber Mills, Portland; Mr. and Mrs. L. H. Wear, Taylor Instrument Co., Portland.

● J. A. Wilcox, Longview Fibre, Longview; J. B. Wilt, Spaulding Pulp and Paper Co., Newberg; Mr. and Mrs. T. G. Waltmon, Ohio Knife Co., Portland; Fred Weleber, Hawley Pulp and Paper, Oregon City; J. A. Wilson, Hawley Pulp and Paper Co., Oregon City; A. D. Woods, Crown Willamette Paper Co., Camas; E. P. Wood, Weyerhaeuser Timber Co., Pulp Division, Longview.

The Use of Starches In the Paper Industry

by JEROME P. STRASSER*

STARCH has some very valuable qualities. It is not a cure-all but used intelligently it has its place. Because of lack of time I am going into the subject, outlining those things which may be of interest to you.

Let us summarize the relation of starch to your business. You are using starch in the beater, tub and calendars. Some of you use adhesives produced from starch for making corrugated boxes, paper bags, cores or in the finishing room.

Starch used in the beater in this section is relatively little. All of you have experimented with it in its many forms. You know that the starches offered for sale are raw, treated or modified. They were used by adding dry, swollen or cooked. The purpose for using starch was to improve some of the physical tests or finish.

The calendar starches used here classify in general to be the same as the beater starches, except that some mills convert the starch in the cooking. These are used cooked in concentrations of from one to eight per cent. The factor of roll pitting which was one of the early problems has been solved.

Tub sizing is not done extensively here. Chlorinated starches are used for this work. Consideration is now being given to producing the tub starches by enzyme or chemical conversion.

We have been conducting a research program at the Institute of

*Stein, Hall Mfg. Co., Chicago. Presented at the joint meeting of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Assn. and the Pacific Section of TAPPI Portland, Oregon, June 3rd and 4th, 1938.

Mill Superintendents Association and of the Pacific Section of TAPPI, were entertained with luncheon and

Paper Chemistry at Appleton where we have been evaluating the various starches and methods of preparation both for beater and tub.

Adding to Beater Best

● We have concluded that of all the ways of using starch, that added to the beater it does the most good. This may sound peculiar in view of the sad experiences that most of you have had with beater starch. The reasons are these. In comparing

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At the DINNER DANCE

In the top picture, standing and facing the camera, are KEITH FRAMPTON of the St. Helens Pulp & Paper Co., and his father, CHARLES G. FRAMPTON, Superintendent of the California Fruit Wrapping Mills at Pomona. Seated, facing the camera, are Mr. and Mrs. ERNEST KERTZ (Mr. Kertz is Pacific Coast representative of John W. Bolton & Sons), Mr. and Mrs. FRED WELEBER and GEORGE SPENCER of the Hawley Pulp & Paper Company. In the background appear Mr. and Mrs. CHARLES SERVER (Appleton Woolen Mills) and Mr. and Mrs. CHARLES E. ACKLEY (Mr. Ackley is paper mill Superintendent of Hawley).

In the foreground of the second picture are Mr. and Mrs. MERRILL E. NORWOOD (Paper Mill Superintendent of Columbia River Paper Mills), Mr. and Mrs. CARL F. GAISER (Purchasing Agent for Crown Willamette Division of Crown Zellerbach at Portland) and Mr. and Mrs. WALTER S. HODGES (representative for Asten-Hill, Appleton Wires and Orr Felts).

In the third picture at the table in the foreground are Mr. and Mrs. LOUIS LANG of Portland, Mr. and Mrs. CARL F. BRAUN (Vice-President and Mill Manager of Hawley Pulp & Paper Co.), Mr. and Mrs. F. V. SAMS (Allis-Chalmers), and Mr. and Mrs. RAY C. HANSEN (Sales Manager National Tank & Pipe). In the left background are: GUY C. MITCHELL, vice-president of the Hesse-Ersted Iron Works; and TOM WALTMON and RALPH JONES of the Ohio Knife Co.

The fourth photograph, in the background left to right; Mr. and Mrs. BERK BANNAN (Western Gear); Mr. and Mrs. DOUGLAS C. MORRIS (James Brinkley Company); S. A. SALMONSON, Assistaint Superintendent Soundview Pulp Co. Standing, KENNETH B. HALL, General Chairman of the convention. Seated at the table in the foreground are: Mr. and Mrs. ANTON SEIBERS (Paper Mill Superintendent of Longview Fibre Co.); Mr. and Mrs. ROY CAREY (National Aniline & Chemical); Mr. and Mrs. JOHN E. HASSLER (Coast Mfg. & Sales Co.); E. W. G. COOPER, Assistant Paper Mill Superintendent of Crown Willamette at Camas; and Mr. and Mrs. CARL FAHLSTROM (Technical Superintendent of the Longview Fibre Co.)

the typical tests of papers tubbed with starch and with like amounts in the sheet of starch added in the beater, the latter always shows to advantage. However, do not misunderstand me. We also found that in adding starch in the beater we could use three or four per cent and only find one quarter to one half per cent retained. Then when we added one half per cent to a sheet from the tub the beater sheet showed best in a basis of amount present. When you stop to figure its efficiency on a basis of amount present and its cost, you have the reason for its non-use in this section. It is surprising what two or three per cent of starch present in a sheet of kraft will show. The problem is how to keep it in the sheet.

We have every reason to believe starch is mechanically retained only. The type and treatment of the furnish is responsible for the results obtained. The fibers with the greatest inherent strength, well hydrated, formed into a tight sheet and running into the heavier weights shows the usefulness of starch to better advantage. The dryer the sheet before the addition of starch the better the results.

Starch Stronger Than Fibers

● Starch as a bonding agent is stronger than any of your fibers.. It has this quality after being hydrated far beyond the point to which your fibers are hydrated. There is no mystery as to why a half to two or three per cent shows up so well if retained. Do not consider it as twenty to sixty pounds of powder per ton of fiber. Think of it in terms of that amount of starch into which a thousand pounds of water or more has been hydrated. A thousand pounds of starch jell will cover an enormous area and wet down a lot of fibers. When the water is removed in the process of drying there is some migration of starch to the surfaces. However, this immeasurable jell appreciably improves the bonding of the fibers.

The less the tear factor has been disturbed in the treatment of the fiber the less harm starch does this quality. Or to picture it another way, if you were to treat the fiber to get maximum mullen comparable to that obtained in the presence of three per cent starch the tear loss is greater because of mechanical treatment than where starch was used.

We have recognized that in some instances using starch in the beater is very inefficient. Many mills have installed size presses as the solution. As you know this is quite expensive and means an added fixed higher conversion cost because of redrying. We have attempted to solve the problem of using starch economically and with a relatively small investment.

The Distributer

We have some slides showing a device mounted on the wet end of a paper machine. This machine we have named a Distributer. It consists of a ten-inch balanced brass roll in a box in which constant level is maintained by means of a variable speed drive independent of the paper machine. The solution in the box is picked up by the roll, the amount being determined by the depth of solution in the box and is further regulated by a slice or doctoring device mounted on top, ten degrees off center in the direction that the roll is driven. The solution remaining on the roll after it passes the top slice is doctored off by a bronze doctor which is oscillated to prevent scoring. The oscillating device is driven off the drive shaft of the roll. The solution flows over the bronze doctor on to a table which conveys it to the sheet on the wire. The angle of the doctor is maintained by the table. Inserted on the face of the table, in the direction of flow is set of channels formed by one-half inch fins or flutes. The channels are five to the inch and about one sixteenth inch wide, six inches long and one half inch deep, streamlined on the top end. They are fixed about five inches from the delivery lip of the table.

The purpose of the channels are to collect the flowing solution, redistribute it so that a perfect film leaves the table to the sheet. The device is mounted over the paper machine wire near the end of the table roll section or over a suction

KENNETH B. HALL as General Chairman of the joint meeting in Portland was in charge of all arrangements » » » MRS. HALL served on the Ladies Committee which planned the program of entertainment for the ladies attending the meeting » » » Mr. Hall is Pacific Coast representative for the Improved Paper Machinery Corporation.

box ahead of the dandy roll. Inasmuch as the speed with which the pickup roll in the box directly influences the velocity of flow it is possible to coordinate the flow of material over the table to the speed of the wire and not disturb formation.

Results With Distributers

● We give some points of interest about the distribution.

The retention of starch is not as good as the tub but the better distribution equalizes this factor and saves redrying.

Capillary attraction during drying causes some concentration of starch on the surface.

This device is used as an inexpensive method of closing up a paper machine to use fillers.

We think that this device offers the possibility of running light weight bag and wrapping papers at higher speeds and getting good test or to bring those types of papers up to specifications when the test is down.

The privilege of discusing this subject before you gentlemen is appreciated. Your questions either now or later are welcome. Thank you.

●

Labor Board Unanimously Settles Two Cases

● The Joint Labor Relations Board of the Pacific Coast pulp and paper industry met in Portland recently and heard two cases which were unanimously and amicably settled.

This was only the second meeting of the board since it was organized four years ago, and brings the number of cases heard to a total of three. In every case, the decision of the board has been unanimous.

The board is composed of eight men, four representing the employers and four representing employees.

Cavin, Marshall & Barr Open Seattle Office

H. D. Cavin leaves on three months European trip to study pulp and paper mill design, construction and operation

● Having finished their work at Bellingham with the completion of the Puget Sound Pulp & Timber Company's new unbleached sulphite pulp mill of 125 tons per day capacity, the consulting engineering firm of Cavin, Marshall and Barr established offices in Seattle on June 15th.

The new offices are at 1215 Exchange Building and the telephone number is Eliot 8777.

Harold D. Cavin is leaving June 21st for a three month's trip to European pulp and paper making countries for the purpose of studying design, construction and operation of the most modern pulp and paper mills. Mrs. Cavin is accompanying her husband.

They will sail from New York July 1st and will go directly to Sweden, returning to the Pacific Coast early in October.

Besides Sweden, Mr. Cavin will visit mills in Norway, Finland, Germany, Czechoslovakia and in England.

Harry L. Marshall and C. M. Barr have moved from Bellingham to Seattle and are now located in the new Exchange Building office. Mr. Cavin is a member of the American Pulp & Paper Mill Superintendents Association.

Superintendents Go To National Meeting

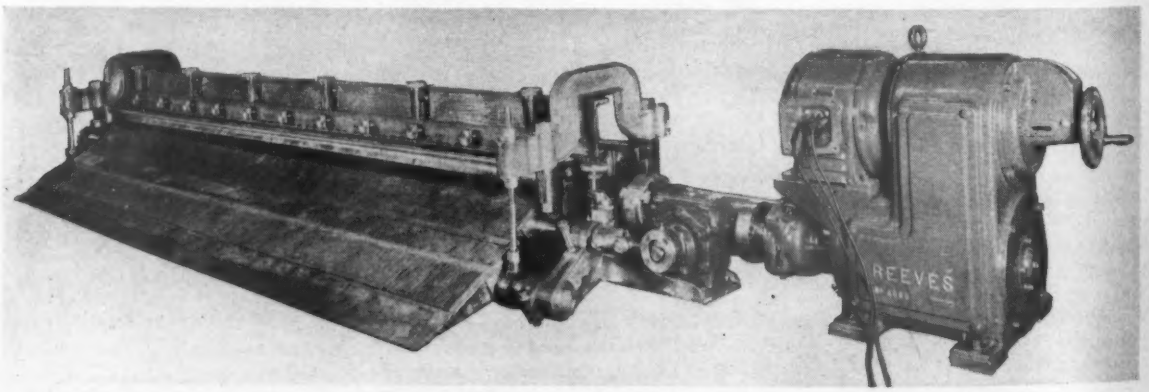
● The annual meeting of the American Pulp and Paper Mill Superintendent's Association, which is being held this year at the Royal York Hotel in Toronto, Ontario, will be attended by at least four Pacific Coast superintendents.

Going East to the meeting, which is to be held June 22nd through the 24th are: L. S. McCurdy, paper mill superintendent of the Port Townsend Division of the Crown Zellerbach Corporation, and chairman of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association; Claude Kelley, paper mill superintendent of Pacific Mills, Limited, Ocean Falls, B. C.; L. Paul Fortier, general superintendent of the Everett Pulp & Paper Company, Everett, Washington; and, Niles Anderson, assistant superintendent of the St. Regis Kraft Company, Tacoma, Washington.

"Dad" Wood at Camas

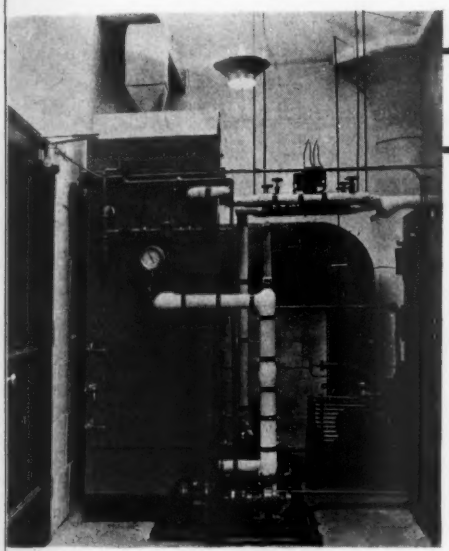
● A. D. "Dad" Wood, well known sulphite pulp man, has come to the Camas mill of the Crown Willamette Paper Company, division of Crown Zellerbach Corporation, and is now supervising sulphite pulp production. He came here from the Tacoma division of Rayonier Incorporated where he was located for a number of years.

His assistant is J. V. Savage, formerly with Rayonier Incorporated, Grays Harbor division, at Hoquiam, Washington.



THE DISTRIBUTER, a device for applying starch size solutions directly to the sheet as it is formed on the wire » » » Described by Mr. Strasser in his paper.

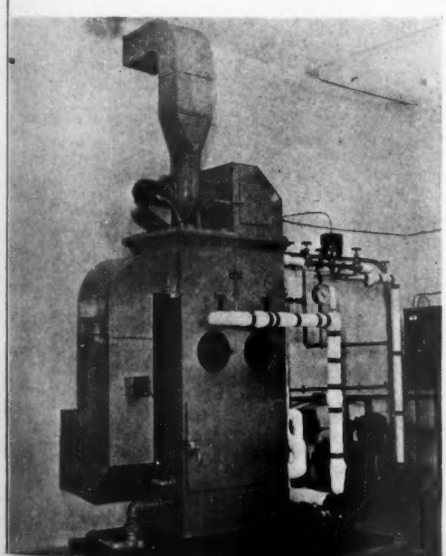
Figure the yearly cost of *spoilage* due to atmospheric changes in your mill . . . .



Views of Ross Air Conditioning Unit for Paper Mills

and you will better appreciate the investment value available from complete

ROSS Air Conditioning Apparatus



Ross air conditioning systems insure positive control of both temperature and humidity—at all seasons—within any predetermined condition required. Designed, built and installed by an organization with a quarter century of experience with paper mill problems—Ross apparatus definitely eliminates damage due to atmospheric changes—cracked, curled, "wet stock." By improving quality of products and preventing spoilage—the equipment pays for itself out of savings effected.

Get our reliable recommendations for equipping your mill to successfully meet the demand for "mill conditioned stock"

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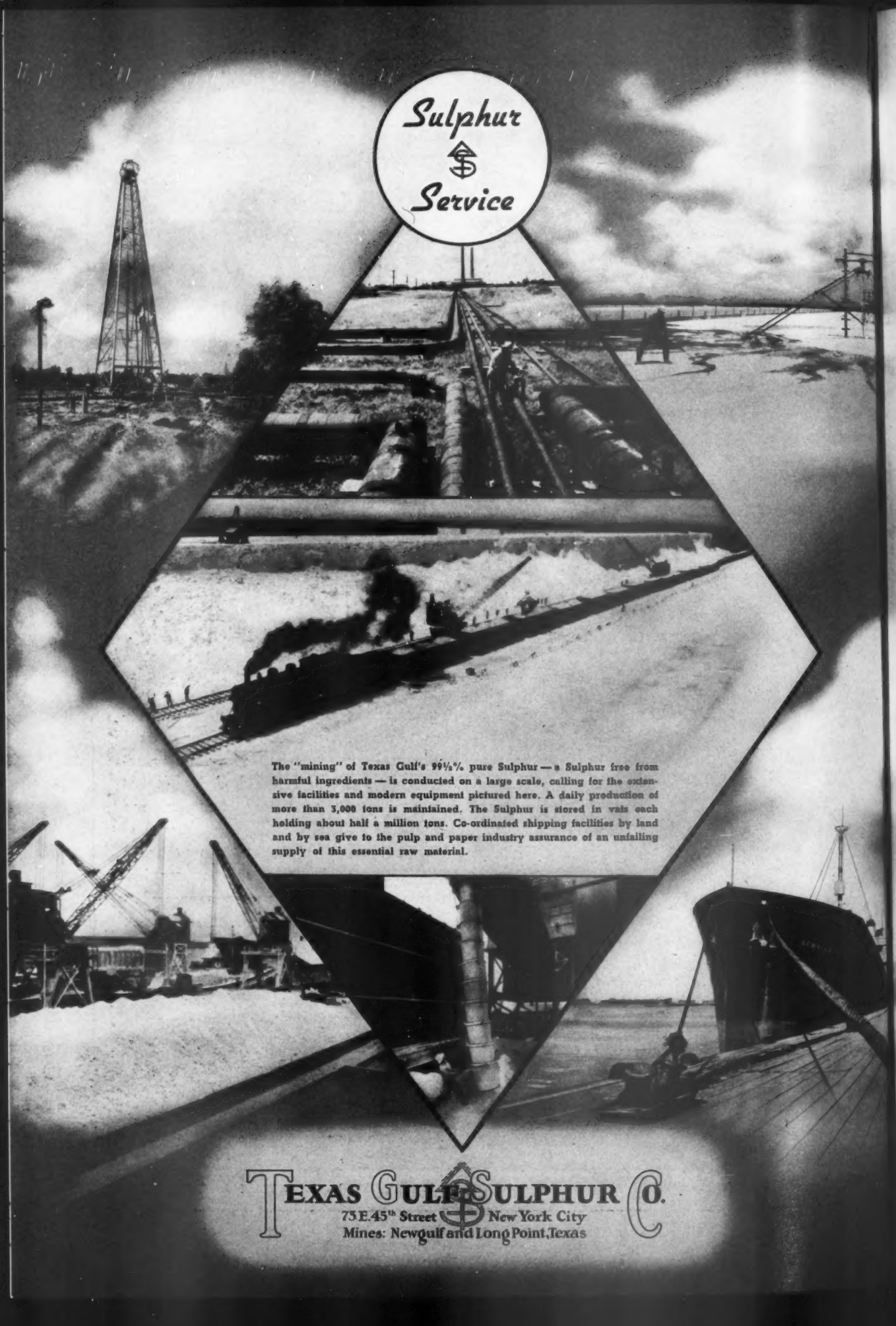
Sulphur
Service
The "mining" of Texas Gulf's 99⅓% pure Sulphur — a Sulphur free from harmful ingredients — is conducted on a large scale, calling for the extensive facilities and modern equipment pictured here. A daily production of more than 3,000 tons is maintained. The Sulphur is stored in vats each holding about half a million tons. Co-ordinated shipping facilities by land and by sea give to the pulp and paper industry assurance of an unfailing supply of this essential raw material.
TEXAS GULF SULPHUR CO.
75 E. 45th Street New York City
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Greater Stability of Production Is Possible Through Economic Studies

Application of the scientific approach to studies of the economic problems affecting the pulp industry should be as fruitful of results as it has been in solving the technical problems

by E. H. BARTON, Pulp Division Weyerhaeuser Timber Company*

THE men in the Pulp and Paper Industry, have probably never before been so actively engaged in studying together the various aspects of our business.

To date, much time and effort has been given by the various technical men in the industry in making scientific studies of the chemical and engineering problems with a view of improving the product and lowering the cost of production. As a result of such efforts, considerable progress has been made.

But there is another aspect of our industry that has not received as much attention nor aroused as much interest. Neither has there been the same scientific approach to the understanding of its problems as has been given to those technical ones. Reference is made to that aspect which has to do with the production, consumption, imports and exports of pulp of this country as well as of the other countries of the world.

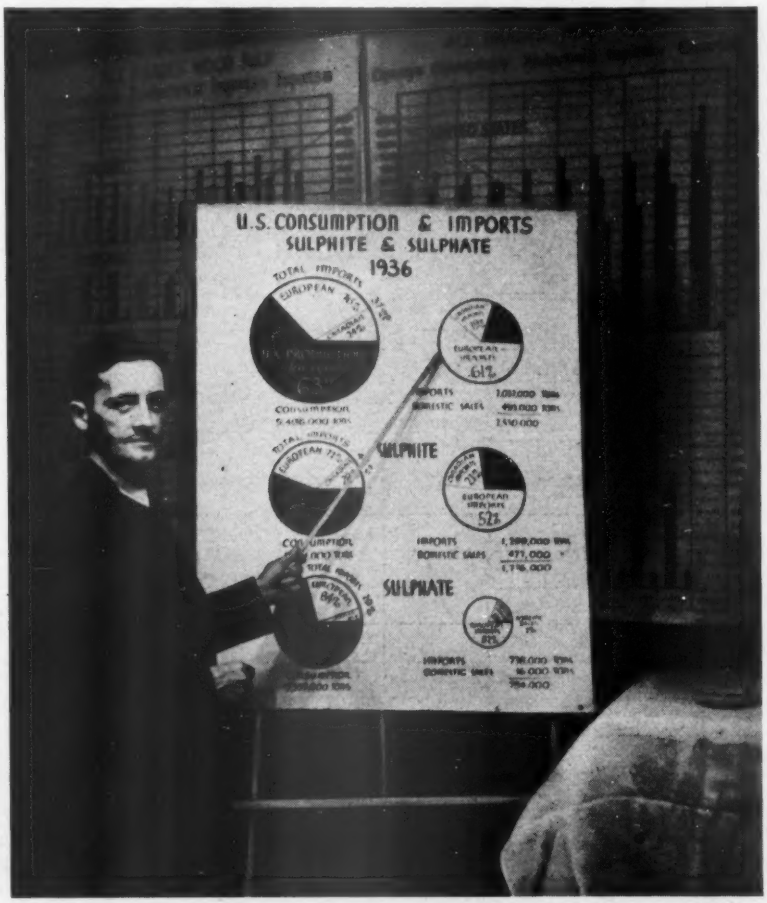
A scientific approach to any problem implies the gathering and recording of observed events and a study of what may be their relationships. Not until that is done can a real understanding be had of the various economic forces at work and their effect upon the operation of our industry.

It may be said that the pulp industry, like any other, is a form of an Industrial Democracy. Any form of democrarcy to be successful must depend in large part upon the amount of accurate information that its members have, the extent of distribution of this information and the use to which it is put. So to continue the improvements this industry has already made, its economic aspects must be more extensively studied and understood.

*Presented by Mr. Barton before the joint meeting of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Assn., and the Pacific Section of TAPPI, Portland, Oregon, June 4th.

● Because pulp is a world commodity, widely used and with practically no tariff restrictions, the business of producing it offers special problems. Also a different set of problems result because some plants produce pulp only of one kind or another; some produce several kinds and in addition to pulp, some plants convert what pulp they make into paper and paper products and may even buy pulp from other mills to use with their own.

We are now in the midst of another business slump and many of us are concerned about the future and where we are going from here. But before we can intelligently plan for the future, it should be recognized that it is very necessary to



Mr. BARTON POINTS TO THE FIGURES showing that of all the wood pulp SOLD in the United States, foreign mills supply approximately 80% and American pulp mills but 20%.

have a clear picture of the industry as a whole, what it has accomplished in the past and the part the various producing countries play in the general scheme of things.

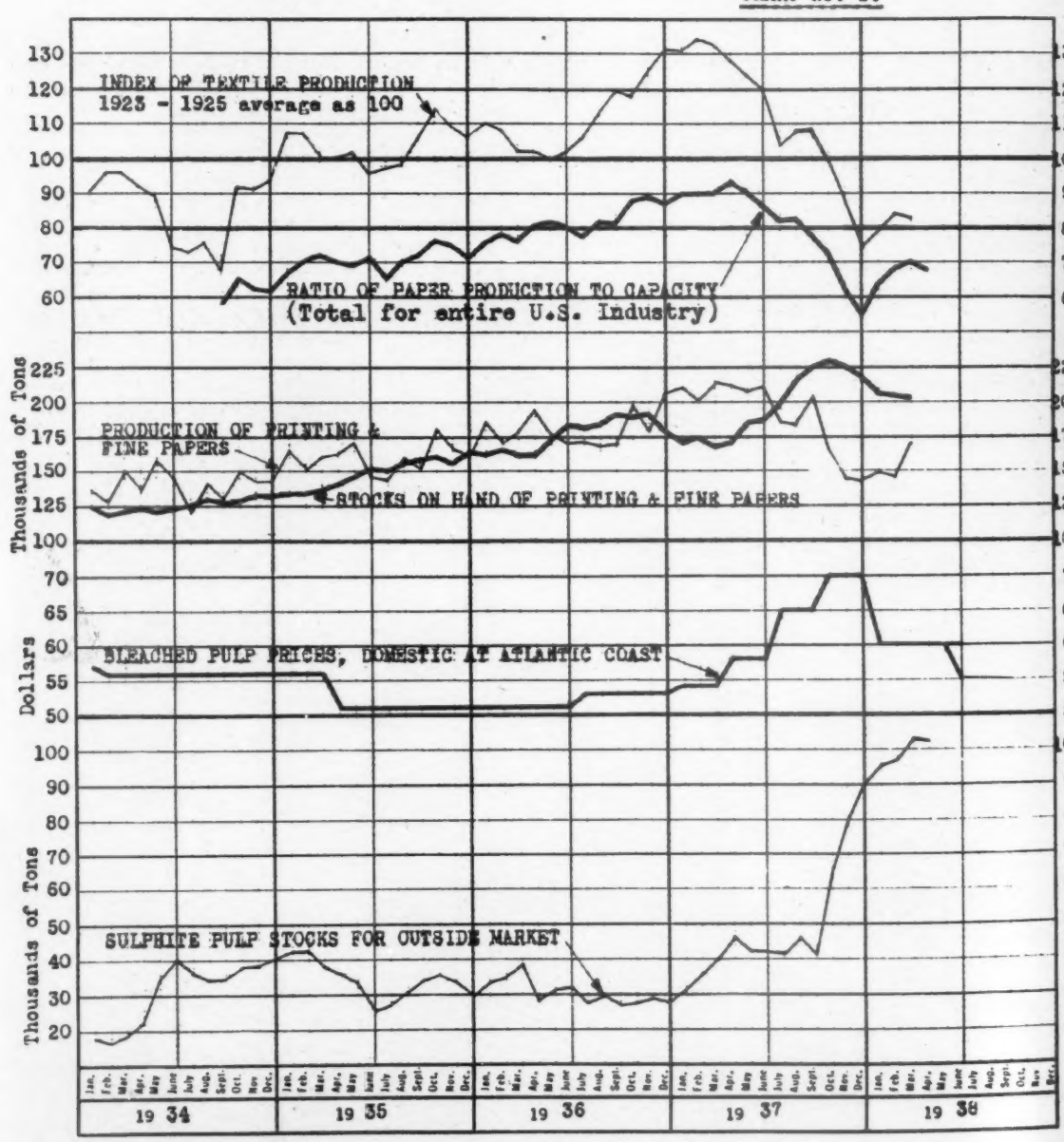
The economic factors affecting this industry are many and varied. Much factual information we have and much we do not have. There are several organizations that have been busy for a considerable length of time gathering all manner of statistical data. The accumulation of figures and tables has become cumbersome and uncoordinated, making it extremely difficult to find the time to properly integrate and evaluate them. By analysis alone, can it be determined how much of this statistical information may be helpful and how much is of no particular consequence. To save time and to get a clearer view and understanding of the whole problem, graphical charts are used.

The following series of charts are given as a start in this direction.

Chart No. 1

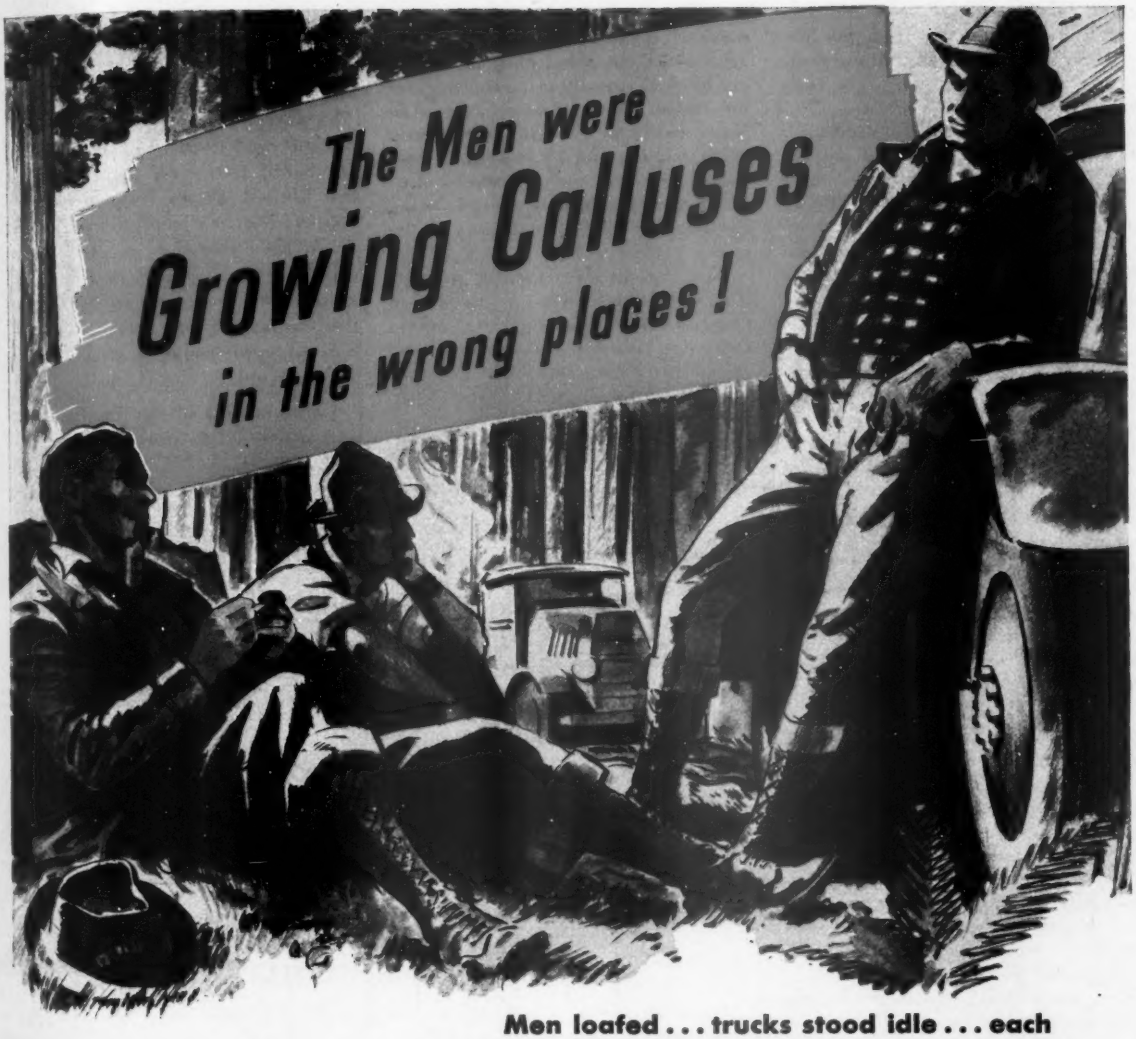
● The first curve in this chart gives the rate of textile production, of which rayon is a large part. The average production in 1923-1925 equals 100. In comparing this curve with the following one for total paper production of the United States mills, a similarity in trends will be noted. However the variations for textiles are much more pronounced than those for paper. When one studies the production indices of other commodities, it is observed that pulp and paper production is among those that vary the least. This industry is remarkable for its relative stability in comparison with

CHART NO. 1.


INDEX OF TEXTILE PRODUCTION
1923 - 1925 average as 100
RATIO OF PAPER PRODUCTION TO CAPACITY
(Total for entire U.S. Industry)
Thousands of Tons
PRODUCTION OF PRINTING & FINE PAPERS
STOCKS ON HAND OF PRINTING & FINE PAPERS
Dollars
BLEACHED PULP PRICES, DOMESTIC AT ATLANTIC COAST
Thousands of Tons
SULPHITE PULP STOCKS FOR OUTSIDE MARKET
19 34
19 35
19 36
19 37
19 38

(Rayon Organon Monthly)
(A.P. & P.A. Monthly Summary)
(U.S.P.P.A. Monthly Summary)

Chart No. 1



Men loafed . . . trucks stood idle . . . each time this logger's tractors jammed with ring trouble. Read how the Shell man helped end these breakdowns*

THE LOGGING BOSS of a large Crescent City lumber company wasn't getting his logs out of the woods on schedule.

His Diesel tractors kept having valve and ring trouble. Logs were delayed in reaching the trucks that hauled them to the mill. As many as five trucks were kept idle at a time . . . while their drivers loafed.

The local Shell man was sent for. He saw that the severe temperatures and rough work called for a special type of Diesel lubricant and recommended the proper grade of a Shell lubricating oil that had proved successful under similar conditions.

These logging tractors have been in continuous operation ever since . . . without a breakdown due to faulty lubrication. This company reports that the motors now run cooler. Valve and ring sticking has been corrected. And they're saving up to 25% on lubricant besides.

Shell's success with problems like this is due to a thorough understanding of mill and logging lubrication requirements . . . and to a line of *better* lubricants developed for this need.

Call in Shell if you're not getting 100% lubrication efficiency. Phone nearest office or write Industrial Lubricants Division, Shell Oil Company, Shell Building, San Francisco, California.

*An actual case history in Shell's files

SHELL MILL LUBRICANTS SHELL

ENGINEERED FOR YOUR 4 BASIC OPERATIONS:

POWER DEVELOPMENT	SPEED CHANGING	POWER DISTRIBUTION	POWER OFFTAKE

many others. However it could be vastly improved. Total paper production is now running slightly under 70% of capacity and is comparable with the 1935 ratio. The heavy line drawn at 80%, represents what might be considered as the normal rate of production. Textile production on the other hand is comparable to the production average for the latter part of the year 1934. This latter comparison is, by the way, characteristic of all industrial commodities taken as a whole.

When the ratio of total paper production is broken down to show the production ratios for the various paper groups, slightly different figures are had. For example, that of Newsprint reached a maximum of 96% in May, 1937, was 74% in December and for March, the latest report, was 70%. Book paper reached its maximum of 85% in April, 1937, was 51% in December and 68% in March. Writing paper reached its maximum of 94% in March, 1937, was 51% in December and 75% in March.

The next two curves give the monthly production of printing and fine papers and the stocks on hand at the end of each month. The upturn of production in the late fall of 1936 corresponds to that shown in the preceding curve for the ratio of total paper production. This was probably caused partly by the general belief of inflation ahead and the desire to hedge against price increases and partly by the talk that there was a world shortage of pulp. The drop in stocks of papers, during the first part of 1937, probably indicates that the consumers of paper were also stocking up. Stocks of these papers reached their maximum in November, 1937, which amounted to 228,029 tons with a production of 149,533 tons. The March report gives equivalent figures of 207,619 tons and 171,228 tons showing a decrease of stocks on hand and increased production.

The fifth curve on this chart gives the Bleached Pulp prices per ton, as reported in trade journals, for domestic pulp ex dock Atlantic Coast.

The bottom curve on this chart gives the tons of Sulphite Pulp on hand which was produced by the U. S. mills for sale in the market. Pulp stocks held by converter mills for their own use are not included.

A careful study of this chart shows some interesting relationships and also suggests other useful information that is not given. For instance, a knowledge of the amount of pulp stocks held by the different paper companies bought in the open market is needed and also the amount of imported pulp stocks being held at various seaports for later deliveries. Arrangements are now being made to get this information so that it may be of benefit to producer, importer and consumer alike which would probably assist to bring about more stable conditions in the paper industry.

The figures for Textile production were obtained from the Rayon Organon monthly and the others from the monthly summaries of the American Paper and Pulp Association and the United States Pulp Producers Association.

Chart No. 2

● Turning now from the present to the past, Chart No. 2 gives the total Chemical Pulp Production by years for the entire world, for countries other than the United States and for the United States alone. The dotted line represents the producing capacities. These capacities are based partly on the reports of the United States Pulp Producers Association and partly on estimates. It will be noted that the world production for 1937 increased approximately 50% over that in 1929 while the United States production increased approximately 56% for the same period.

Relationships of the Pacific Coast and other U. S. producing regions to the total 1937 U. S. production of sulphite and sulphate are as follows:

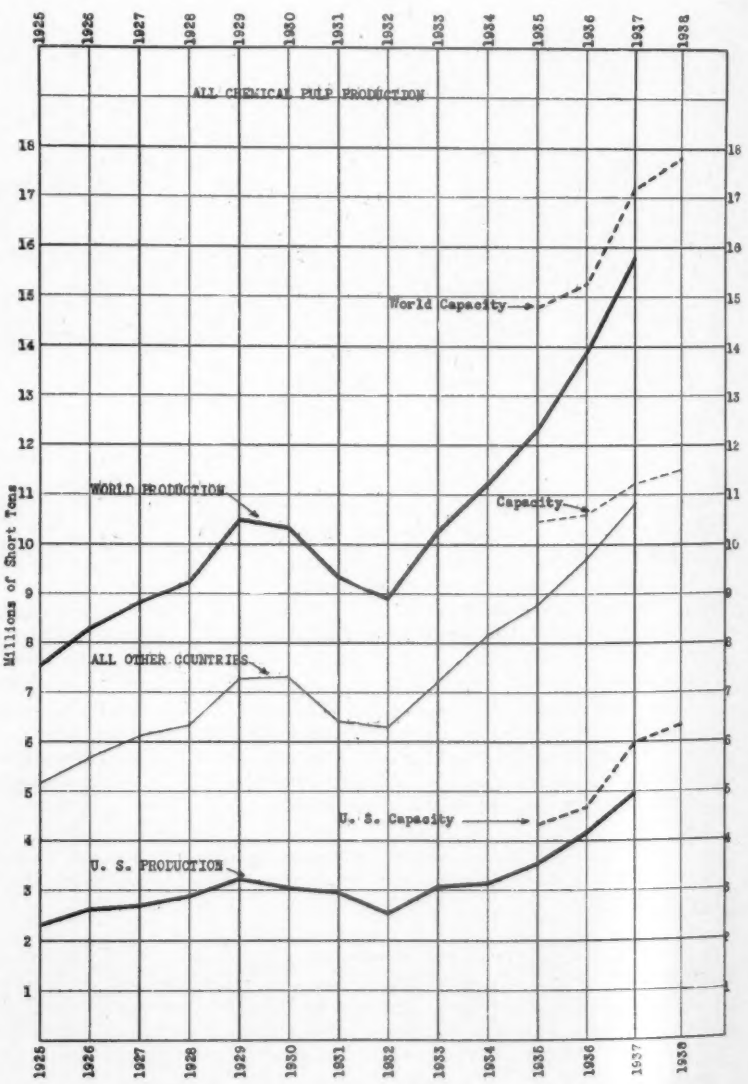


Chart No. 2

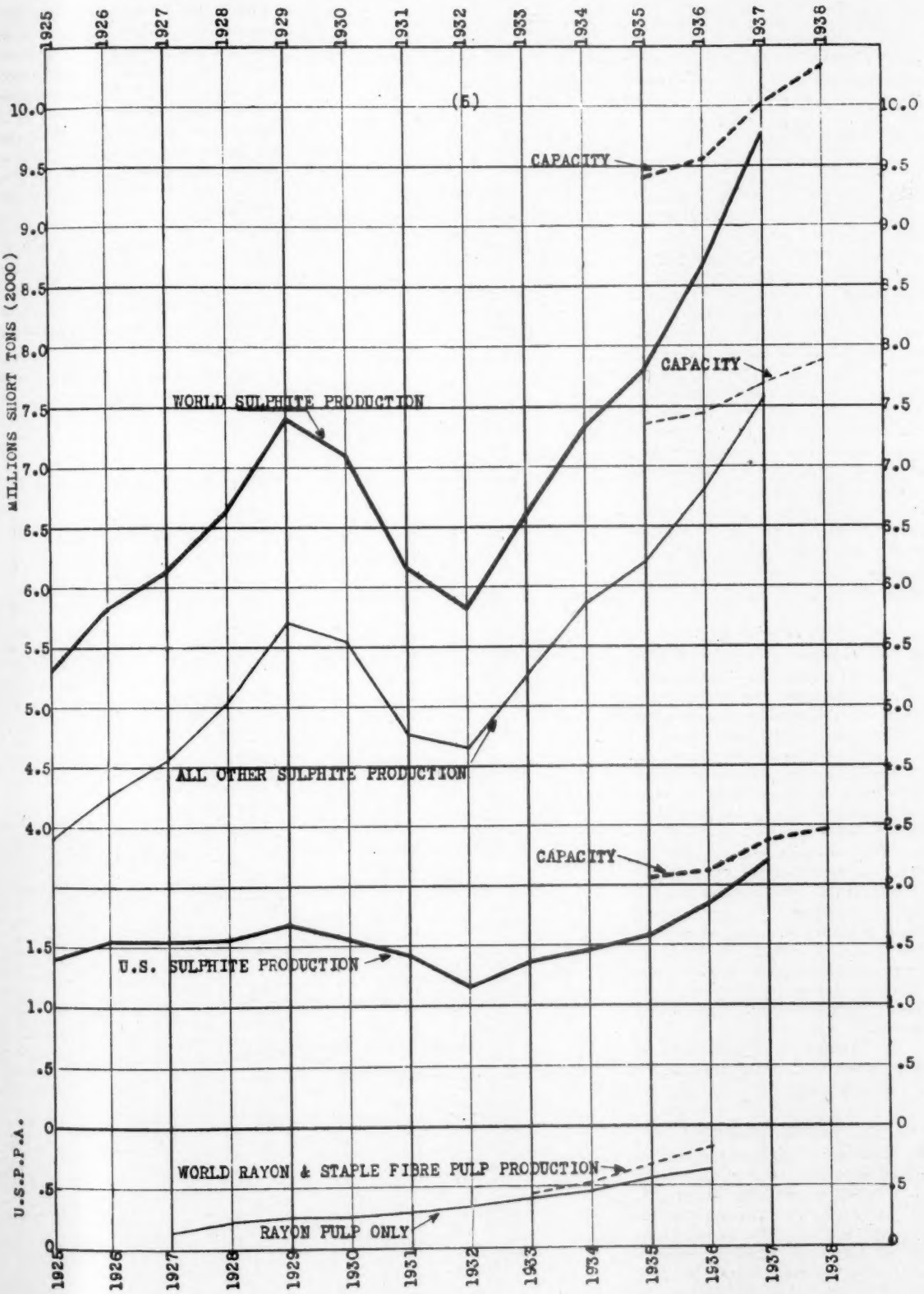

1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
(5)
MILLIONS SHORT TONS (2000)
CAPACITY
WORLD SULPHITE PRODUCTION
CAPACITY
ALL OTHER SULPHITE PRODUCTION
CAPACITY
U.S. SULPHITE PRODUCTION
U.S.P.P.A.
WORLD RAYON & STAPLE FIBRE PULP PRODUCTION
RAYON PULP ONLY

Chart No. 3

	Sulphite	Sulphate	Total
New England	23%		11%
Middle Atlantic	9%		4%
Lake States	24%	12%	27%
Southern States	3%	76%	40%
PACIFIC COAST	41%	12%	27%
	100%	100%	100%

Chart No. 3

● This chart is for Sulphite Production only. It should be explained that this is incomplete as several of the smaller countries do not report their production of sulphite and sulphate separately. They only show the amount of chemical pulp produced in addition to whatever mechanical pulp they might have. However, this chart does include the big majority of mills in the world. It shows the general trend which can be compared with chart No. 5 for sulphate production.

Rayon Production for the world in terms of pulp is given to show the increase in the use of sulphite pulp for this product. These figures include a small amount of cotton linters.

Chart No. 4

● This chart gives the United States Consumption of Sulphite Pulp by years and the Imports. Imports are also shown as a percent of consumption. It should be noted that there has been a general upward trend in the percentage of sulphite pulp imported. This was especially marked during the period of depreciated currencies. When the per cent of par value of foreign monies in terms of the U. S. dollar became nearer 100, the per cent of imports declined. Per cent par of Swedish money was plotted because that country's exports to the U. S. are the largest and its money value is closely tied to the monies of the other European pulp producing countries.

This stresses the importance of keeping up to date information on foreign exchange.

Chart No. 5

● This chart gives the Sulphate Production. It is for the same countries as the one for sulphite. It will be noted that sulphate production did not have the decline during the depression years the sulphite had. The United States in 1937 produced practically one-half of the world production. The large increase in capacity is due to the new mills in the southern states.

Chart No. 6

● This chart gives the Consumption and Imports of Sulphate Pulp. The per cent of imports to consumption is much different from that of sulphite pulps.. This is principally due to the fact that most of the sulphate mills are self contained and therefore consume their own pulp. Consequently there is only a relatively small market for the importer to supply. The effect of the depreciated currencies is again evident.

Chart No. 7

● This chart compares the Consumption and Imports of Sulphite and Sulphate Pulps for the year 1937. Out of a total consumption of both pulps, 35% was imported. Of the sulphite consumption, 43% was imported and 25% of the sulphate was imported. This left hand column of circles represents all mills. In the right hand column only pulp produced for sale (as pulp) is shown. Out of the total consumption of 6,225,000 tons, 2,765,000 tons or 44.5% was manufactured for sale as pulp. Out of this amount, the U. S. mills furnished 22%; the European producers, 59%, and the Canadian 19%.

Imports to the United States come principally from the following countries:

(Chart No. 7 appears on page 29)

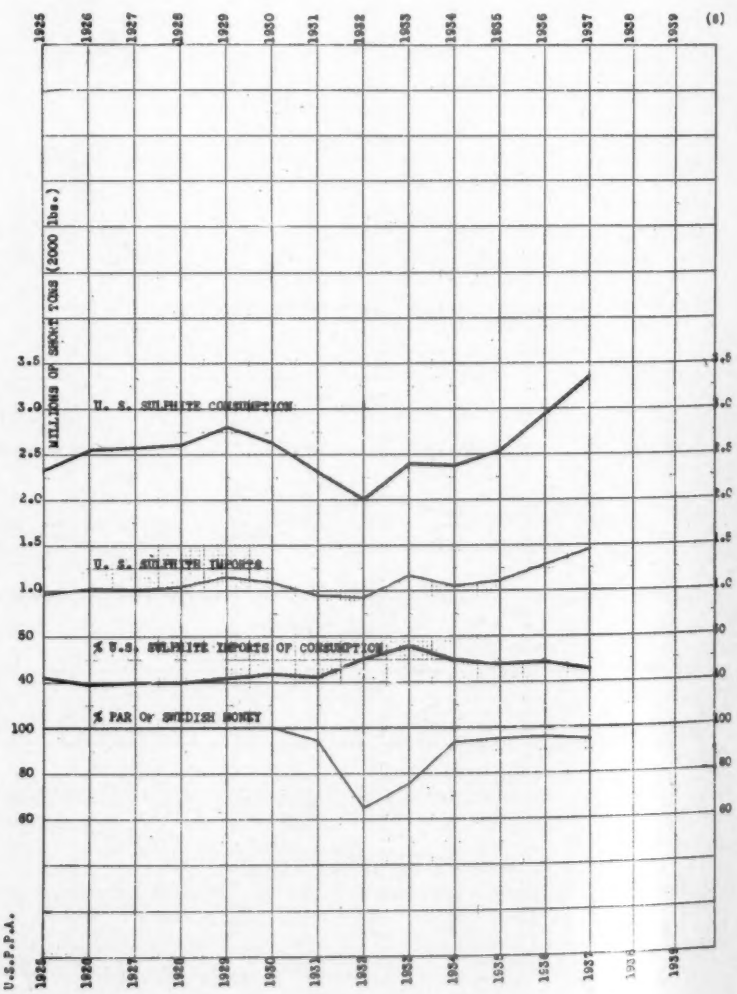

MILLIONS OF SHORT TONS (2000 lbs.)
U. S. SULPHITE CONSUMPTION
U. S. SULPHITE IMPORTS
% U.S. SULPHITE IMPORTS OF CONSUMPTION
% PAR OF SWEDISH MONEY
U.S.P.P.A.

Chart No. 4

	% 1936 Imports	% 1937 Imports
Sweden	49%	47%
Finland	14%	12%
Norway	6%	4%
Germany	3%	3%
Canada	24%	30%

The foregoing charts with their explanations represent merely a start toward attaining a better understanding of our industry as a whole and the relationships of the various producing countries to our own. It is hoped that they will indicate the necessity for more complete, as well as more current statistics on the pulp and paper industry. The presenting of up to date current statistics is very dependent upon the promptness of the various reporting companies in sending the reports requested by their associations.

Violent price fluctuations work against production stability. Before we can achieve such stability, which would be of benefit to both consumer and producer, all of the relevant economic facts must be considered. These can not be fully comprehended until they are presented in such a graphical manner as to make them readily understood. When this is done, all parties concerned will benefit by being able to direct their operations more intelligently.

●

MacBain Back From Trip

● D. K. MacBain, resident engineer of the Weyerhaeuser Timber Company pulp division at Longview, returned to the plant a short time ago after a trip into the South. He spent some time in New Orleans while away.

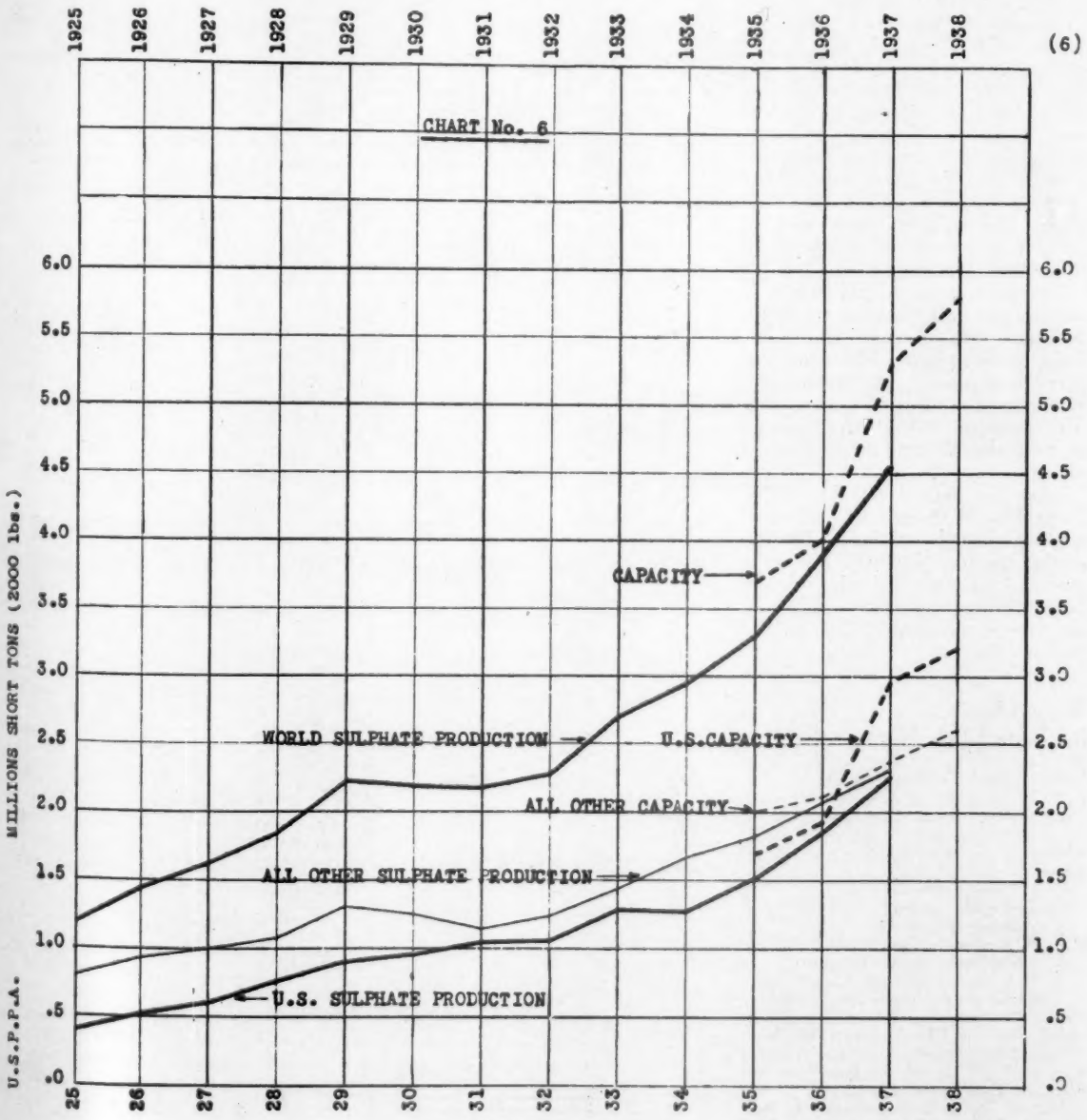


Chart No. 5

McGregor Appointed Superintendent of Weyerhaeuser at Longview

● Robert B. Wolf, general manager of the Pulp Division, Weyerhaeuser Timber Company, recently announced the appointment, effective May 1st, of George H. McGregor as superintendent of the Longview bleached sulphite pulp mill of which W. Norman Kelly is manager.

Mr. McGregor has been associated with the Longview mill since 1934, serving in various capacities, principally as technical director. His experience in the pulp and paper industry combines technical study and practical experience. George McGregor is a 1925 graduate of the University of Wisconsin with the degrees of B. C. and M. S. in chemical engineering. From his graduation in 1925 until 1928 he was employed as a chemist by the Northwest Paper Company of Cloquet, Minnesota. In the latter year he was awarded the Northwest Paper Company's fellowship in graduate study at the University of Wisconsin.

Upon completion of this study in 1929 Mr. McGregor returned to Cloquet and was placed in charge of the company's laboratories remaining until 1931 when he left to become an instructor in pulp and paper manufacture at the Institute of Paper Chemistry in Appleton, Wisconsin. In 1934 he left Appleton to join the Weyerhaeuser organization.

From his arrival on the Pacific Coast Mr. McGregor has taken an active part in the affairs of TAPPI, serving as vice-chairman last year and as chairman of the Pacific Coast Section this year, completing his term at the meeting in Portland this month.

West Linn's 35-Year Club Meets

● The "35-Year Club" of the West Linn mill of the Crown Willamette Paper Co., division of Crown Zellerbach Corporation, met at luncheon June 3, when service pins in recognition of an additional five years of service were presented to the following:

C. E. Bruner, 40-year pin.
Frank Oliver, 40-year pin.
G. Reddick, 40-year pin.
F. D. Simmons, 35-year pin.
I. Rittenhouse, 35-year pin.
J. A. Rayle, 30-year pin.

Presentation of the pins was made by Albert Bankus, who also gave an interesting talk on the Crown Zellerbach Corporation. Other guests and speakers were A. R. Heron of the San Francisco office, J. E. Hanny of Camas, Norman Gibbs of Rayonier Incorporated, Port Angeles, E. W. Erickson of Port Townsend and Mr. Brodie, publisher of the Oregon City Enterprise. Mr. Brodie was presented with a small replica of a roll of paper, suitably engraved in recognition of 50 years of continuous newsprint purchase from the West Linn mill.

The "35-Year Club" is, as its name implies, composed of those who have been in the employ of the company for 35 years or more. The club meets to present pins as in this case, and stages an annual dinner meeting between Thanksgiving and Christmas, with only members present.

At this time there are 14 employees at West Linn who have 35 years or more service. Six of these have been there forty years or more, while one has been there more than 45 years. He will, in fact, be eligible for a 50-year pin in another year. The other seven members all have 35 years or more to their credit.

It is significant to note that between 73 and 74 per cent of all the men in the West Linn mill wear pins showing five years or more service.

Louis Bloch Makes European Trip

● A trip to Europe was made in May by Louis and Mrs. Bloch of San Francisco. Mr. Bloch is chairman of the board of Crown Zellerbach Corporation. They expected to be gone two months.

New St. Helens Wood Room Running

● The new wood room recently completed by the St. Helens Pulp & Paper Company went into operation June 6, and is working very successfully, according to President Max Oberdorfer.

Crown Willamette Technical Men Meet

● At the annual banquet of the Crown Zellerbach association of technical men and superintendents, which was held at the Heathman hotel in Portland, May 24th, eleven Crown Willamette Paper Company division men were awarded service pins. They were:

Twenty years — George Chinakos, Maurice Godsil, Robert J. Nills, J. A. Beauchamp, Ernest Montgomery and Dave Hirschberger.

Twenty-five years — Benjamin Reed, Otto Pieritz and F. F. Sullivan.

Thirty-five years — Claude Smith and Harvey Turner.

Presentations of the pins were made by Roy Young of San Francisco.

Aside from the awarding of service pins the rest of the evening was devoted to discussion of wood problems. Phil Simcoe of the Port Townsend Division was the principal speaker.

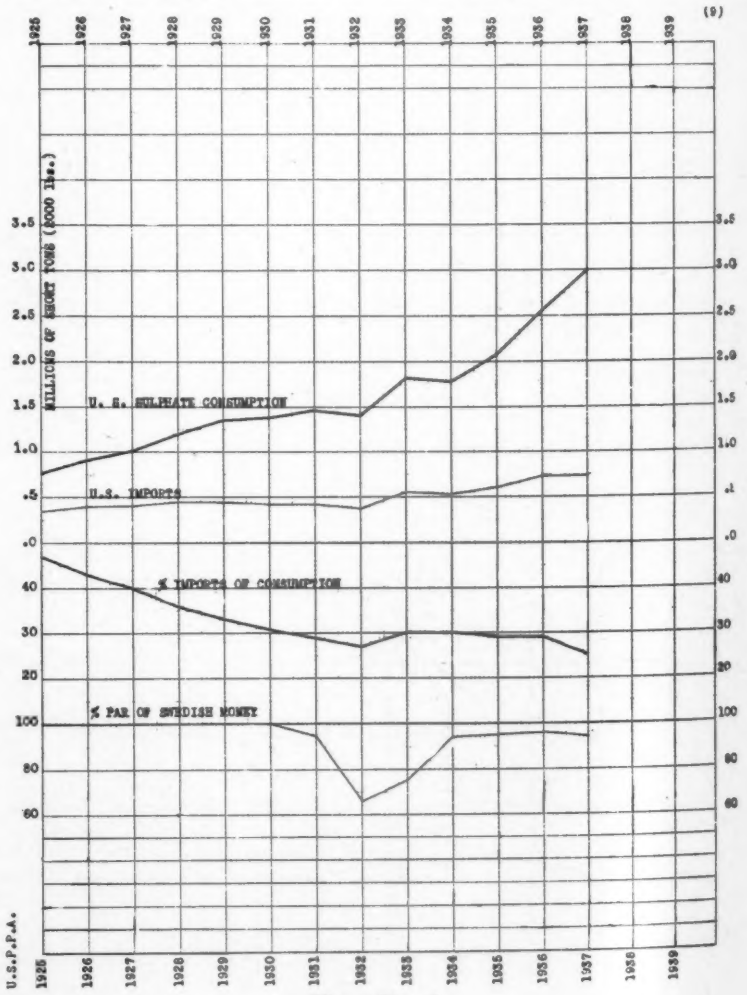

(9)
1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939
MILLIONS OF SHORT TONS (2000 lbs.)
U. S. SULPHATE CONSUMPTION
U.S. IMPORTS
% IMPORTS OF CONSUMPTION
% PAR OF SWEDISH MONEY
U.S.F.P.A.

Chart No. 6

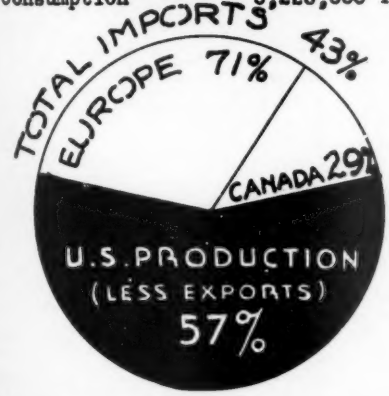
No. 7.

U. S. CONSUMPTION AND IMPORTS
SULPHITE AND SULPHATE PULPS
1937

Consumption 6,225,000 Tons

Imports	2,166,000 Tons	
Domestic Sales	599,000 "	
Total Sales	2,765,000 "	44.5%

SULPHITE



Consumption 3,309,000 Tons

Imports	1,432,000 Tons	
Domestic Sales	544,000 "	
Total Sales	1,976,000 "	59.6%

SULPHATE

Consumption 2,916,000 Tons

Imports	734,000 Tons	
Domestic Sales	55,000 "	
Total Sales	789,000 "	27.0%

(Source; Vol.3, No.1 WOODPULP U.P.P.A.)

Chart No. 7

TAPPI Holds Dinner Meeting at Vancouver

Lawrence Killam, President of British Columbia Pulp & Paper Company, Speaker

● On Monday, May 2nd, the Pacific Section of TAPPI completed its 1937-1938 series of seven successful dinner meetings with a well attended dinner at the Terminal City Club in Vancouver, B. C. Andreas Christensen, technical adviser to the British Columbia Pulp & Paper Company, Limited, was in charge of the meeting and served as toastmaster. One hundred and twenty-eight men attended, according to G. D. Humphreys of the B. C. Pulp & Paper Company, who had charge of registration.

At the speaker's table with Mr. Christensen were Lawrence Killam, president of the British Columbia Pulp & Paper Company, Limited; Frank Drumb, manager of Pacific Mills, Limited; G. J. Armbruster, general superintendent of Soundview Pulp Company; G. S. Brazeau, manager of the Everett mill; W. Norman Kelly, manager and George H. McGregor, superintendent of the Longview mill of the Weyerhaeuser Timber Company.

Two moving pictures preceded Mr. Killam's talk. Carl Grieve, sales engineer of the Goodyear Tire & Rubber Company, Ltd., exhibited a picture showing his company's rubber plantations. The second picture, entitled "The Inside Story," was a talking picture covering very thoroughly the problems of lubricating internal combustion engines. The picture was shown by the Imperial Oil Company of Canada, Ltd., by M. O. Corkill, division manager at Vancouver.

Mr. Killam in his interesting talk pointed out that some people on the Coast had been worried about development of pulp and paper production in the Southern states, but it was his conviction that the Pacific Coast had nothing to fear from the South and should welcome this natural development.

"I do not want to discount the excellent work done by Dr. Charles Herty in creating an important new pulp industry in the southern pine forests," said Mr. Killam, "but the south had pine pulp mills before the industry was ever launched in British Columbia. However, production has reached a high point there now and the south is definitely a factor in the continent's pulp situation."

Already at Maximum

● Mr. Killam said he did not believe that the south could produce much more pulp than it was now doing. While it was being argued that pine trees suitable for pulping could be grown in ten years —less than one-quarter the time required in the northern woods—he believed that under natural conditions the forest southern pine would require at least twenty-five years' growth.

The much-publicized advantage of the south in having cheap labor was largely a myth, said Mr. Killam, who said the minimum rates paid in areas where the industry was well developed was forty cents an hour.

● "Instead of regarding the south as a threat, we should accept it as a respectable member of the family of pulp-producing countries and co-operate with it," said Mr. Killam. "The pulp era is just beginning, and chemistry will continue to find so many new uses for pulp that there should be no serious fear of a market glut over a long term of years."

Mr. Killam said that it was still uncertain whether southern hardwoods could be utilized for pulp and thus compete with the longer fibred northern woods. So far no one had been tempted to finance the experiments necessary.

Burdened by War Costs

● Reviewing world markets for pulp, Mr. Killam said that militarism had been clogging the wheels of industrial peace. Germany had an allotment for only $100,000 of Canadian pulp this year as a result of rearmament purchases elsewhere, and $100,000 worth would not go far in meeting the Nazis' demand for ammunition pulp. Japan had sought to buy 700,000 tons of sulphite pulp this year, but permits for importing only 75,000 tons had so far been issued owing to financial stringency caused by the Sino-Japanese war. Japan had wanted one-sixth of the world's total output of bleached sulphite pulp, yet it was apparently unable to buy more than a negligible quantity.

Pulp production, due to temporarily depressed markets, was much lower this year than in 1937, and Mr. Killam said that, while it might have been only a coincidence, last Thursday only a single pulp mill on the Pacific coast was operating.

● "The world is affected by fear and discontent, and probably there are grounds for both," said Mr. Killam. "But we have less to fear in this country than anywhere else, and we should take advantage of our superior position. There have been sweeping industrial and social changes, and no one will argue the right of labor to organize, but we should not tolerate professional agitators who destroy the right of labor to work. Nor should governments be permitted to harass industry during periods of curtailed production, bleed our diminishing sources of income, and encourage people to believe they have a right to prosper without working."

LAWRENCE KILLAM
Spoke at Vancouver

The following men attended the Vancouver, B. C., TAPPI meeting on May 2nd:

● T. Ahlen, Svenska Flaktfabriken, Stockholm, Sweden; Jerry Alcorn, Pulp Division, Weyerhaeuser Timber Co., Everett; W. A. Anderson, Gordon & Belyea, Ltd., Vancouver, B. C.; Fred R. Armbruster, Powell River Company, Ltd., Powell River, B. C.; G. J. Armbruster, Soundview Pulp Company, Everett; W. R. Arnold, Durham & Bates of Canada, Ltd., Vancouver, B. C.

● John Ashby, Westminster Paper Company, New Westminster, B. C.; A. E. Baker, B. C. Pulp & Paper Co., Ltd., Vancouver, B. C.; H. B. Bald, Kingsley Navigation Co., Vancouver, B. C.; E. J. Barton, Reliance Motor & Machine Works, Ltd., Vancouver, B. C.

● G. S. Brazeau, Pulp Division, Weyerhaeuser Timber Co., Everett; E. P. Brennan, Resident Manager, Woodfibre Division, B. C. Pulp & Paper Co., Woodfibre, B. C.; Don Campbell, Dominion Rubber Co., Vancouver, B. C.; Robert S. Canten, Commercial Chemicals, Ltd., Vancouver, B. C.; Frank E. Cantwell, Western Equipment Corporation, Vancouver, B. C.; L. P. Carter, E. F. Houghton & Co., Vancouver, B. C.; W. L. Carfrae, Marshall-Wells B. C., Ltd., Vancouver, B. C.; E. D. Casseday, Vancouver, B. C.

● H. D. Cavin, Cavin, Marshall & Barr, Bellingham; Kenneth Chapman, Pulp Division, Weyerhaeuser Timber Co., Everett; R. E. Chase, R. E. Chase & Company, Tacoma; Andreas Christensen, B. C. Pulp & Paper Co., Ltd., Vancouver, B. C.; J. V. B. Cox, Hercules Powder Company, Portland, Oregon; M. O. Corkill, Imperial Oil Limited, Vancouver, B. C.; John Davidson, Gordon & Belyea, Ltd., Vancouver, B. C.

● W. W. Davison, Standard Oil Co. of B. C. Ltd., Vancouver, B. C.; D. M. Denholm, Tyee Machinery Co., Ltd., Vancouver, B. C.; Harry A. Doen, Dominion Rubber Corporation, Vancouver, B. C..

● F. A. Drumb, Pacific Mills Limited, Ocean Falls, B. C.; Bernard Dunell, C. C. Moore & Company, Vancouver, B. C.; G. S. Eldridge, G. S. Eldridge & Company, Vancouver, B. C.; W. P. Ferguson, Peacock Bros., Ltd., Vancouver, B. C.; F. L. Fields, Bank of Nova Scotia, Vancouver, B. C.; George Fletcher, Dominion Bridge Co., Ltd., Vancouver, B. C.

● A. F. Frattinger, Canadian Allis-Chalmers, Vancouver, B. C.; Miller Freeman, Jr., Pacific Pulp & Paper Industry, Seattle; Irving R. Gard, Merrick Scale Mfg. Co., Seattle; Allan S. Gentles, Dominion Bridge Co., Ltd., Vancouver, B. C.; A. S. Gerry, Pulp Division, Weyerhaeuser Timber Co., Everett; H. H. Gilmour, Bank of Montreal, Vancouver, B. C.

● P. D. Gordon, Gordon & Belyea, Ltd., Vancouver, B. C.; N. C. Grainger, Imperial Oil Ltd., Vancouver, B. C.; W. C. Grieve, Goodyear Tire & Rubber Co., Vancouver, B. C.; W. H. Hafaus, Shell Oil Co., Ltd., Vancouver, B. C.; R. C. Hardie, Canadian General Electric Co., Ltd., Vancouver, B. C.

● T. A. Haslett, B. C. Pulp & Paper Co., Ltd., Woodfibre, B. C.; S. J. Hatchett, Canada Metal Co., Vancouver, B. C.; F. H. Hedley, Canadian Westinghouse Electric & Mfg. Co., Vancouver, B. C.; Edward A. Heiss, Wallace & Tiernan Co., Seattle; W. S. Hodges, Capital Wire Cloth Mfg. Co., Portland; J. B. Holdcroft, Pacific Coast Pipe Co., Ltd., Vancouver, B. C.

• G. D. Humphrey, B. C. Pulp & Paper Co., Ltd., Vancouver, B. C.; C. Idyll, B. C. Pulp & Paper Co., Ltd., Woodfibre, B. C.; W. C. Johnson, Crane, Ltd., Vancouver, B. C.; William N. Kelly, Consulting Engineer, Vancouver, B. C.; W. N. Kelly, Pulp Division, Weyerhaeuser Timber Co., Longview; Leo C. Kelly, Mill Supt., Woodfibre Division, B. C. Pulp & Paper Co., Woodfibre, B. C.

• Stig Kempe, Stockholm, Sweden; B. L. Kerns, Westinghouse Electric & Mfg. Co., Seattle; Ernie E. Kertz, John W. Bolton & Sons, Portland; Arthur S. Killam, Fleck Bros. Ltd., Vancouver, B. C.; L. Killam, B. C. Pulp & Paper Co., Ltd., Vancouver, B. C.

• L. H. Killam, B. C. Pulp & Paper Co., Ltd., Vancouver, B. C.; W. W. King, Oliver United Filters Inc., San Francisco; R. S. Larie, Vancouver, B. C.; F. G. Lightfoot, Northern Electric Co., Vancouver, B. C.; A. H. Lundberg, Seattle; Colin C. Macdonell, B. C. Pulp & Paper Co., Ltd., Woodfibre, B. C.

• T. W. MacNeill, Canadian General Electric Co., Vancouver, B. C.; G. H. McGregor, Pulp Division, Weyerhaeuser Timber Co., Longview; Bain L. McKinnon, B. C. Pulp & Paper Co., Ltd., Port Alice, B. C.; B. H. McNamee, Dominion Bridge Co., Ltd., Vancouver, B. C.; J. W. Martin, Schorn Paint Co., Seattle; W. G. Metcalf, Frank Darling Co., Vancouver, B. C.

• Ned Menzies, The W. S. Tyler Co., Seattle; H. E. Miller, Simonds Canada Saw Co., Ltd., Vancouver, B. C.; D. Milligan, Gutta Purcha & Rubber, Ltd., Vancouver, B. C.; T. E. Moffitt, Hooker Electrochemical Co., Tacoma; S. Morton, R & M Bearings Canada Ltd., Vancouver, B. C.; Gerald Myers, Pacific Coast Pipe Co., Ltd., Vancouver, B. C.

• S. E. Nord, Standard Oil Co. of B. C., Ltd., Vancouver, B. C.; E. A. Norton, Pulp Division, Weyerhaeuser Timber Co., Everett; W. J. Olds, B. C. Conveying Machinery Co., Vancouver, B. C.; Ray Onkels, Westminster Pulp & Paper Co., New Wewtminster, B. C.; J. A. Paget, Peacock Brothers, Ltd., Vancouver, B. C.; R. S. Parry, Chess Bros., Btd., Vancouver, B. C.

• Arthur Pearson, Structural Engineer, Vancouver, B. C.; R. M. Phail, W. M. Phail & Sons, Vancouver, B. C.; Rowland Pike, Simonds Canada Saw Co., Ltd., Vanacouver, B. C.; S. B. Plummer, Imperial Oil Co., Vanacouver, B. C.; Albert S. Quinn, Stebbins Engineering Corp., Seattle; E. Redpath, Vancouver Engineering Works, Ltd., Vancouver, B. C.

• A. F. Rees, Standard Oil Co. of B. C., Vancouver, B. C.; L. M. Reid, Fleck Bros., Ltd., Vancouver, B. C.; H. H. Richmond, Electric Steel Foundry, Portland; R. H. Richmond, B. C. Pulp & Paper Co., Ltd., Woodfibre, B. C.; A. R. Rigley, Goodyear Tire & Rubber Co., Vancouver, B. C.; E. D. Ronan, B. C. Pulp & Paper Co., Ltd., Vancouver, B. C.; Harlan Scott, Pacific Pulp & Paper Industry, Seattle; Martin Shanahan, Shanahan's Ltd., Vancouver, B. C.

• Fred Shaneman, Pennsylvania Salt Mfg. Co. of Washington, Tacoma; T. J. Sharland, B. C. Pulp & Paper Co., Ltd., Vanacouver, B. C.; Charles L. Shaw, Vancouver Daily Province, Vancouver, B. C.; Brian Shera, Pennsylvania Salt Mfg. Co. of Washington, Tacoma; George B. Simpson, Waterous, Ltd., Vancouver, B. C.; A. G. Smith, Reliance Motor & Machine Works, Ltd., Vancouver, B. C.

• J. F. Smith, Great Western Electro-Chemical Co., San Francisco; Lawrence K. Smith, Pacific Pulp & Paper Industry, Seattle; William Smith, Burns & Co., Ltd., Vancouver, B. C.; F. J. Sparks, Marshall Wells B. C., Ltd., Vancouver, B. C.; Curly Stewart, Pacific Lime Co., Ltd., Vancouver, B. C.; W. Stormont, Imperial Oil Co., Ltd., Vancouver, B. C.

• J. G. Storey, W. H. Malkin Co., Ltd., Vancouver, B. C.; Earl G. Thompson, Great Western Electro-Chemical Co., Seattle; H. B. Thompson, Canadian General Electric Co., Ltd., Vancouver, B. C.; W. H. Traeger, Standard Oil Co. of B. C., Ltd., Vancouver, B. C.; George Van Waters, Van Waters & Rogers, Seattle; Frank B. Wetherill, Link-Belt Company, Ltd., Vancouver, B. C.; C. H. E. Williams, Vancouver, B. C.; C. S. Williams, Canadian Fairbanks Morse Co., Ltd., Vancouver, B. C.

• Frank D. Wilson, Simonds Canada Saw Co., Ltd., Vancouver, B. C.; H. H. Wilson, Imperial Oil, Ltd., Vancouver, B. C.; J. R. Wilson, Tyee Machinery Co., Ltd., Vancouver, B. C.; J. S. Wilson, Tyee Machinery Co., Ltd., Vancouver, B. C.; George R. Wyer, Canadian Fairbanks-Morse Co., Ltd., Vancouver, B. C.; A. C. R. Yuill, Dominion Engineering Co., Ltd., Vancouver, B. C.; J. C. Yule, Kenwood Mills, Ltd., Arnprior, Ontario.

Tipka With Hawley at Oregon City

• Vernon L. Tipka, formerly at the Crown Willamette mill at Camas, has joined the staff of the Hawley Pulp & Paper Company to engage in research work, it has been announced by vice president Carl E. Braun.

Lundberg to Handle Vortrap For Acid Cleaning

• A. H. Lundberg, 3311 First Avenue South, Seattle, was on May 18th appointed by the Nichols Engineering and Research Corporation of New York to manufacture and sell Vortraps on the Pacific Coast for the purpose of cleaning acid in sulphite pulp mills.

The Vortrap, developed six years ago at the mills of the Consolidated Paper Corporation at Three Rivers, Quebec and introduced in the United States a year ago, is being rapidly adopted by pulp and paper mills throughout all pulp and paper making countries for the purpose of removing fine dirt by centrifugal action from all types of stock from acid and from chemical solutions. It is unique in that it has no moving parts, the centrifugal action being obtained by the injection of the material to be cleaned tangentially under high pressure.

Mr. Lundberg's appointment was made by Henry J. Hartley, president of the Nichols Engineering and Research Corporation, who has spent some time on the Coast in the past year in connection with the Vortrap, the Nichols-Herreshoff recovery furnace and the Nichols-Freeman flash roaster for burning pyrites.

Ryberg Visiting In South

• Joe Ryberg, superintendent of the St. Helens Pulp & Paper Company mill, left June 15 for a pleasure trip in the South. He is visiting relatives en route, and will go as far as New Orleans. He will be back at the mill after a trip of a month or more.

Youngman Visits Eastern Canadian Offices

• Frank N. Youngman, vice president of Pacific Mills, Ltd., recently returned to Portland after a trip through central Canada. Leaving the first of May, he went to Winnipeg, Calgary, Edmonton, Saskatoon and Regina, where he visited the branches of the Hudson Paper Company. He returned by way of Chicago after a trip of two weeks.

The Hudson Paper Company is a Canadian wholesale paper concern which was acquired earlier this year by Pacific Mills, Ltd.

Joe Kaster, Sr., Dies in Salem

• Joe Kaster, Sr., died at his home near Salem, Oregon, on Sunday, May 29th, at the age of 74. Mr. Kaster was well known by paper makers on the Coast having been superintendent of the Oregon Pulp & Paper Company, a position now held by his son, Joe Kaster, Jr.

Mr. Kaster was associated with the formation of the St. Helens Pulp & Paper Company in 1925 and 1926 but in that year retired from the paper industry to look after his personal interests.

Some years ago Mr. Kaster built a model paper making machine, complete in every detail, which would make a sheet of paper ten inches wide.

Mr. Kaster is survived by his widow; three sons, Joe, Jr., and George of Salem, and Howard of Alameda, California; and a daughter, Mrs. Margarite Foelkl of Salem.

Fir-Tex Offers Fire Retardant Board

• The Fir-Tex Insulating Board Company of St. Helens, Oregon, has brought out a new product in a fire retardant board which, although on the market only about 60 days, has already gained a wide acceptance.

Fire marshalls of several large cities have given it their approval following tests which showed the new board to be fire retardant in a high degree. It has been used in the construction of a large Portland school, where board of the Fir-Tex type has hitherto not been permitted.

According to manager R. W. Simeral, the fire resisting qualities are due to the use of vermiculite, which is both a fireproofing and an insulating material. The vermiculite is mixed all through the board and a heavier coating is put on the surface.

To speed production of the new board, the company is installing an expanding plant for expanding vermiculite.

Spaulding Running Half

• The Spaulding Pulp & Paper Co. mill at Newberg, Ore., resumed the first of this month, after being shut down all through May. The present plan is to operate a full schedule on alternate months, amounting to 50 per cent of capacity production, according to superintendent J. B. Wilt.

Installation of the new dryers has not yet been started, but it is expected work will begin shortly.

Gus Ostenson Wins Camas Golf Meet

• The Crown Willamette Golf Association of the Camas mill finished their spring tournament June 10, and wound up with a gala banquet that evening.

Gus Ostenson finished in first place, winning the final round in the first flight from "Bud" George Rundquist, runner-up for the championship.

In the second flight Miles Cady was winner, with Harry "Chief" Clark second. J. L. Shively took top honors in the third flight, in which Clifford Arnold was runner-up.

Ben Britton was first in the fourth flight, with Oscar Klee second. Merle Britton won the fifth fiight, and Erwin Doyle was runner-up.

At the conclusion of the competition, the association held a dinner at the Orchard Hills Golf Club, and George Charters presented the trophies. There were 10 cups for the winners, for the first two places in all five flights.

Server Moves To Olympia

• In order to provide better service to a larger number of pulp and paper mills, Charles M. Server, Pacific Coast representative of the Appleton Woolen Mills, makers of felts, moved on June 11th from Portland to Olympia, Washington.

Mr. Server will make his headquarters at the Olympian Hotel and his mail address is P. O. Box 665, Olympia.

Isadore Zellerbach Honored For 50 Years Service

● Only one 50-year service pin ever was awarded by the Crown Zellerbach Corporation and that was given May 17th to Isadore Zellerbach, San Francisco, president of that company and long head of the many Zellerbach pulp and paper interests.

More than 600 employes of the Zellerbach organizations in the San Francisco area gathered at the San Francisco Commercial Club on that date to celebrate the half-century of accomplishment of the man who, on the humble beginnings of his father, Anthony Zellerbach, built a business structure that stands today in the first ranks of American industry.

It was an inspirational occasion. Mr. Zellerbach sat looking down on that assemblage not as the president of a great corporation but as a kindly father. He listened to pledges of loyalty and affection from the various company groups and he beamed on his wife and children—two sons and a daughter and two grandchildren—the fourth generation of Zellerbachs.

Archie Martin, executive vice-president of Crown-Zellerbach, presented the guest of honor with his service pin and then Isadore Zellerbach stepped up to the microphone to talk.

"I want to say how proud I am tonight to have my dear wife beside me," he went on. "This little girl, 47 years ago, when our business was small, used to come down every night and keep our books.

● "It is great to live to be fifty years in service and have you people honor me, because in honoring me you honor our institution. It isn't me you honor—it is what I represent.

"As long as I can keep that confidence and respect, I know you'll take care of our organization. It is in your hands to keep the good will for our corporation, so never do anything you know isn't right. Hold your heads up and tell the truth.

"Go down the line selling merchandise with pride and delivering your merchandise as you sell it. Serve your customers right—and they'll take care of you."

Mr. Zellerbach was born at Moore's Flats, Nevada County, California. He went to grammar school and then helped his father. In 1888, when the son was 22, the father took him into the business as partnership, along with two brothers, and the firm was styled A. Zellerbach & Sons. This partnership was dissolved in 1907 and the company was incorporated under the name of Zellerbach Paper Co., with Isadore as president.

Mr. Zellerbach has served since 1926—under four governors—as a member of the California Fish and Game Commission.

In a long business life he never lost sight of the simple beginning upon which the corporate structure was built. In one lifetime he steered his organization from a one-family affair to the gigantic unit it is today, yet despite its size, it somehow has continued to be a family affair.

ISADORE ZELLERBACH
"It is great to serve 50 years"

THE FIRST FIFTY YEAR SERVICE PIN was awarded to ISADORE ZELLERBACH, President of the Crown Zellerbach Corporation (right) by ARCHIE B. MARTIN, Executive Vice-President of the company (left) » » » J. D. ZELLERBACH, Executive Vice-President of Crown Zellerbach, stands behind his father.

Measurement of Incrustant Removal From Cellulose Fibres*

by GEORGE E. SCHMIDT, Chemist
Pennsylvania Salt Manufacturing Company of
Washington, Tacoma, Washington

ABSTRACT

A rapid method for the measurement of incrustant removal was studied and applied to the several processes used in the isolation and purification of the cellulose fibers.

Data are submitted to illustrate the variables that were found to influence the test.

A comparison of chemicals consumed, and impurities dissolved, as well as the pH of the reacting solutions, are plotted in order that one may observe the effectiveness of these chemicals in removing impurities.

The effect of several cooking and refining processes upon the quantity and rate of removal of organic matter was studied, including sulphite and Kraft digestion, causticizing, chlorination, and several stages of hypochlorite treatment.

Introduction

THE object of this report is to set forth findings relative to the removal of incrusting materials from the pulping of the chips to the final purification of the fibers after digestion, measuring the quantity of incrustants removed by means of a more rapid test than that mentioned by Samuelson[1]. The rate of incrustant removal was found to depend upon the type and concentration of the chemical used, time and temperature of the reaction, and the pulp consistency.

Variables affecting the test were investigated to determine the most favorable conditions of time, temperature and concentration to pursue in standardizing the test to be known as the Incrustant No. It may be defined as the c.c. 0.1N $KMnO_4$ consumed per gram of air dry pulp.

The writer would like to leave the impression that this method was suggested as a means of studying the trends characteristic to the chemical process employed and would hesitate to endorse its use as a control measure until it was subjected to a more thorough study.

The Incrustant No. was first used in the laboratories of the Pennsylvania Salt Manufacturing Company of Washington, Tacoma, Washington, for the purpose of studying the effectiveness of Caustic Soda in removing incrustant material and was carried through the other refining processes for the purpose of comparing quantities removed.

Incrustant Number

● A small sample of the pulp suspension is removed from the reaction chamber and filtered through a buckner funnel equipped with a filter paper. Suction is applied and approximately 25-30 ml. of the fiber-free clear liquor is pipetted into a 500 ml. Erlenmeyer flask. The sample is diluted to approximately 150 ml. with tap water and then set on a hot plate to boil. When the solution starts to boil, 25 ml. of 0.1N potassium permanganate are added and boiling continued for exactly five minutes. The solution is cooled immediately and made up to exactly 300 ml. volume with tap water and adjusted to 25° C. 25 ml. of 4N sulphuric acid and 10 ml. of 5% potassium iodide solution are added. The solution is rapidly titrated with 0.1N sodium thiosulphate to a pale yellow color before adding starch indicator solution and titrating to a colorless endpoint.

This method will probably be identified as a modification of the Wiles[2] method for testing the bleachability of pulp.

Method of Sampling

● The samples that contain considerable amounts of available chlorine or sulphur dioxide, i. e., oxidizing or reducing agents, should be freed of these interfering substances by boiling for several minutes before adding the permanganate solution.

In processes where the incrustants removed are considerable in quantity, the following method of sam-

*Presented at the Joint Meeting of the Pacific Section of TAPPI and the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association, Benson Hotel, Portland, Oregon, June 3rd and 4th, 1938.

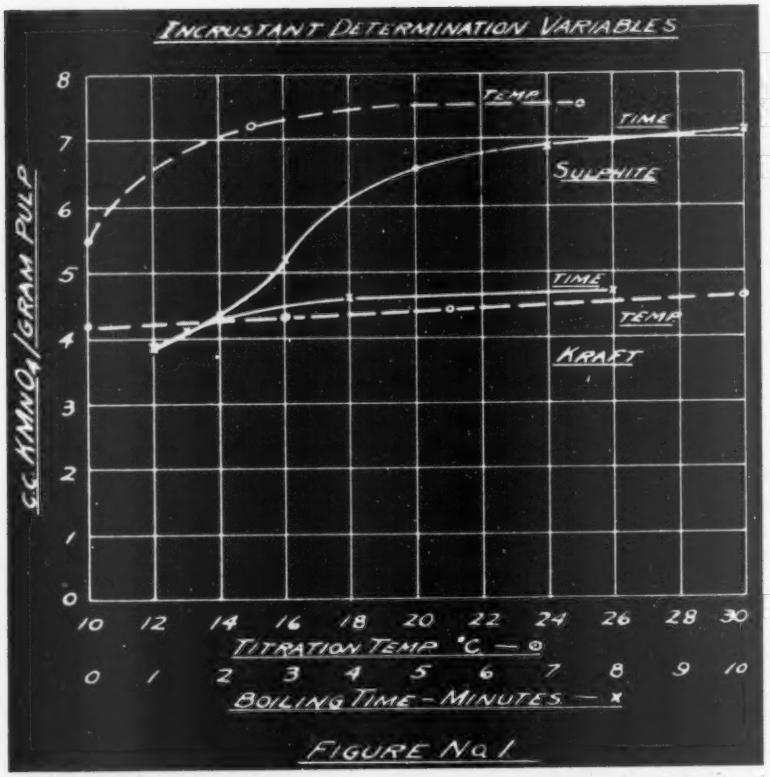


FIGURE No 1

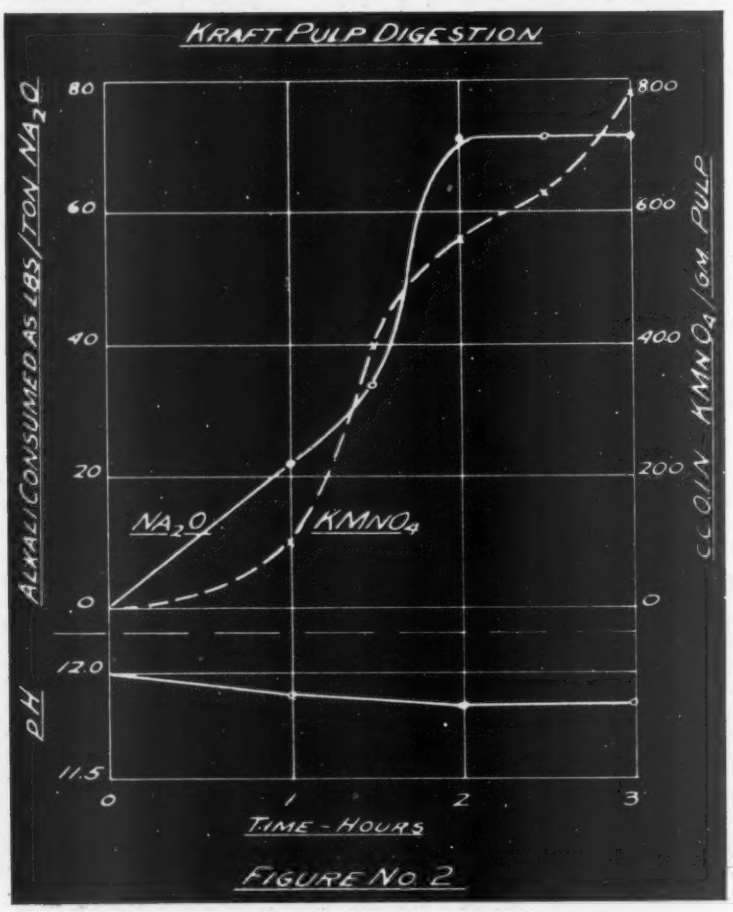


FIGURE No 2

pling is recommended. For liquid from a Kraft digestion, after filtering a 5 ml. sample is made up to 500 ml. in a volumetric flask and a 5 ml. aliquot used for the test. This sample represents 0.05 ml. of the cooking liquor. For liquors from a sulphite cook 10 ml. of the filtered liquor is made up to a volume of 500 ml. and a 5 ml. aliquot taken for testing. In this dilution 0.10 ml. of the original cooking liquor is used for the determination.

Sampling of the fiber-free liquor from the chlorinating, causticizing and bleaching stages requires the use of a 10 ml. filtered sample without dilution in order to have approximately the same concentration of permanganate solution as used for cooking liquors.

This method of sampling will be found to give a concentration of permanganate solution having a sufficient excess at all times. The ml. of permanganate consumed should not be permitted to go over 10 ml. in which case further dilution of sample would be necessary.

Discussion of Test Variables

In order to understand more clearly the effect of variables on the oxidizing power of the permanganate solution, a sample of sulphite and kraft liquor were examined in like manner.

First, four or five samples were boiled for exactly five minutes, cooled, and then titrated at several different temperatures. Several more samples were then boiled, removing the flasks at several different reaction periods but titrating each one at 25° C.

From an examination of Figure 1 it will be noted that the dissolved incrustants contained in an alkaline solution are more readily oxidized in a permanganate solution than are the incrustants in sulphite liquors. The reaction is practically complete in 3 minutes for alkaline solutions, whereas 5 minutes are necessary where acid reactions are used.

The reaction temperature for alkaline liquors has a very slight effect upon the Incrustant No. but when using acid substances, the temperature has a considerable effect up to 20° C.

It is evident from these curves that a titration temperature of 25° C. and a boiling period of 5 minutes is suitable for complete reaction for acid and alkaline solutions.

Discussion of Results

● **Kraft and Sulphite Cooking.** The rate of removal of incrustants from the chips in a Kraft digestion (Figure 2) and the alkali consumed, would indicate a direct relationship between pulping and chemicals absorbed. The rapid increase in the chemical usage at the blow is due to steam dilution not accounted for in the calculations. In the first hour, the freeing of the fiber is retarded to quite an extent because of the time necessary for penetration of the chips. The second hour appears to completely defiber the chips identified by the heavy incrustant removal and caustic consumption. According to Jayme[3] these incrustants consist of ash (inorganic), resinous substances, residual lignin and hemicelluloses such as mannan, pentosan, laevosans, etc. Although the liberation of the fiber seems to be complete after the second hour, there appears to be a purification step in the last hour indicated by some alkali absorption in the first part of the final hour. The absorption of further caustic might be explained by the penetration of the alkali through the outer surface of the fiber accounting for the swelling characteristics of the fiber from this type of cooking as well as the high freeness caused by a mat of looser texture very well explained by Jayme[3]. Table II.

A study of the cycle of incrustant removal and sulphur consumed on a sulphite cook (Figure 3) is indicative of the sulfite process. If one will follow the Incrustant No. it will be noticed that the first five hours are confined principally to chip penetration, while the 5th to 8th hours are responsible for the greater part of the pulping action on the chips. After the 8th hour, the defibering is apparently about complete. The incrustants removed in this type of cooking, like in kraft, consist principally of resinous matter and also lignin and the hemicelluloses. The sulphur consumed during the first 5 hours would indicate a slower absorption by the chips with the greater usage between the 5th and 7th hours when the pulping was most intense.

In arriving at the sulphur consumption, a uniform rate of recovered relief was taken into consideration figured from an arbitrary total SO_2 recovery. This may account for some discrepancy in sulphur demand particularly between the 7th and 8th hours of the cooking schedule.

The Palmrose[4] method was adopted for determining the total SO_2 making the necessary correction for the sulphur loosely combined with lignin. Table III.

Caustic Treatment of Chlorinated Kraft Pulp

● The effect of temperature on the incrustant number of chlorinated kraft pulp is clearly shown in the following table. At a consistency of 9% A.D. and with a caustic soda concentration of 1% the caustic consumed and the incrustants removed vary for the two temperatures noted. Figure 8.

At room temperature (77° F.) the caustic is consumed rapidly the first 15 minutes of the reaction and then drops off slowly. Although the rate of incrustant removal is greater during the first 15 minutes, the reaction indicates gradual incrustant removal until the pulp is washed.

The higher temperature (140° F.) accelerates the removal rate of the chloro-lignins and resinous substances in the first quarter hour and a more rapid purification during the

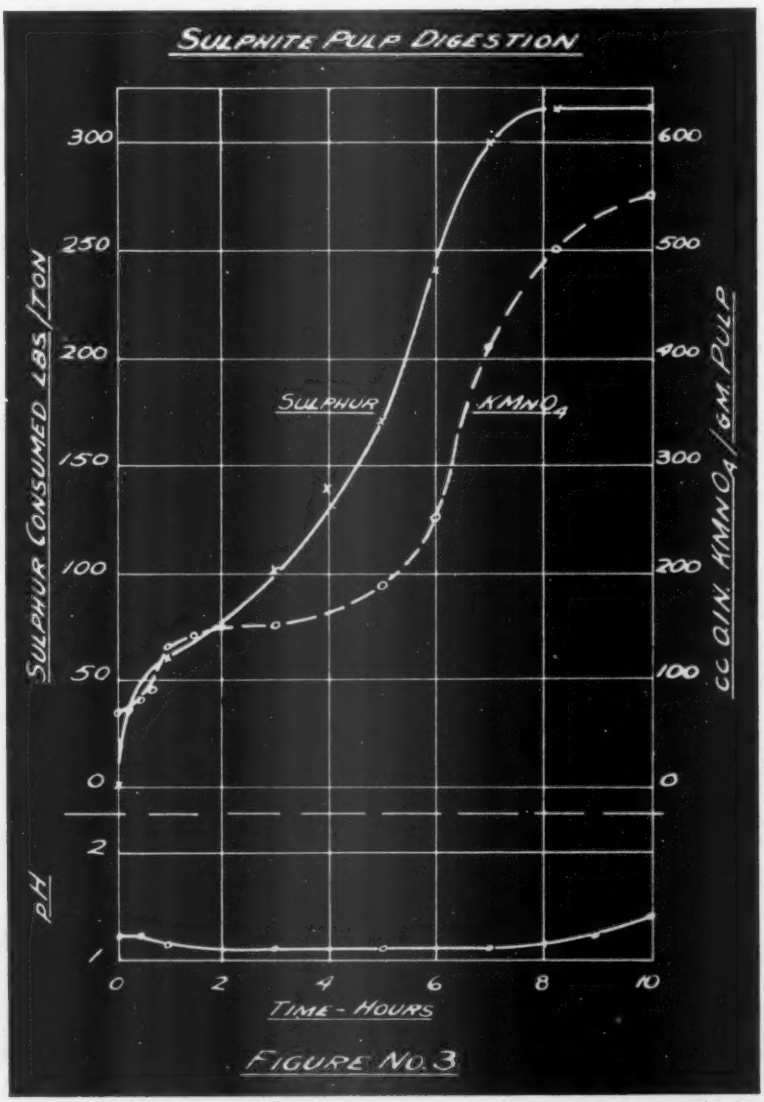


FIGURE NO. 3

TABLE I

Rate of Consumption and Removal Data

Kraft

Chlorination Minutes

Time	0	15	30	45	60
#Cl_2/T	103	112	118	119	120
Inc. No.	4.70	9.50	10.06	10.25	10.25
ph	1.70	1.60	1.55	1.53	1.50

Causticizing Minutes

Time	15	30	45	60
#NaOH/T	17.3	17.6	17.9	18.2
Inc. No.	7.50	8.25	9.02	9.02
pH	10.2	10.2	9.8	9.8

Bleaching Hours

Time	½	1	1½	2	2½	3
#Cl_2/T	15	20	23	26	28	32
Inc. No.	0	1.0	1.5	2.8	4.3	4.8
pH	10.9	10.6	10.2	9.5	8.5	7.9

Hard Sulphite

Chlorination Minutes

Time	0	15	30	45	60
#Cl_2/T	77	90	91	92	93
Inc. No.	34.00	35.25	37.00	38.75	40.00
pH	1.80	1.75	1.70	1.70	1.70

Causticizing Minutes

Time	15	30	45	60
#NaOH/T	9.4	9.9	10.1	10.2
Inc. No.	3.00	3.10	3.15	3.60
pH	11.1	11.1	11.1	11.1

Bleaching Hours

Time	½	1	1½	2	2½
#Cl_2/T	3.5	4.2	4.7	.....	5.2
Inc. No.	.30	.30	.30	.....	.35
pH	9.2	8.6	8.2	.....	7.9

Soft Sulphite

Chlorination Minutes

Time	0	15	30	45	60
#Cl_2/T	.....	48.5	49.5	50	50
Inc. No.	24.00	24.00	24.25	25.75	26.25
pH	1.8	1.8	1.8	1.8	1.8

Causticizing Minutes

Time	15	30	45	60
#NaOH/T	21	21	21	21
Inc. No.	7.9	10.5	.....	13.2
pH	11.7	11.7	11.5	11.3

Bleaching Hours

Time	½	1	1½	2	2½	3
#Cl_2/T	4.95	6	7.6	10	11.6	12
Inc. No.	.....	.....	.5	1.25	1.45	1.47	1.50
pH	.....	10.9	10.1	9.2	.....	.....

NOTE: In the chlorination stage 0 minutes indicates end of chlorine addition and beginning of retention period.

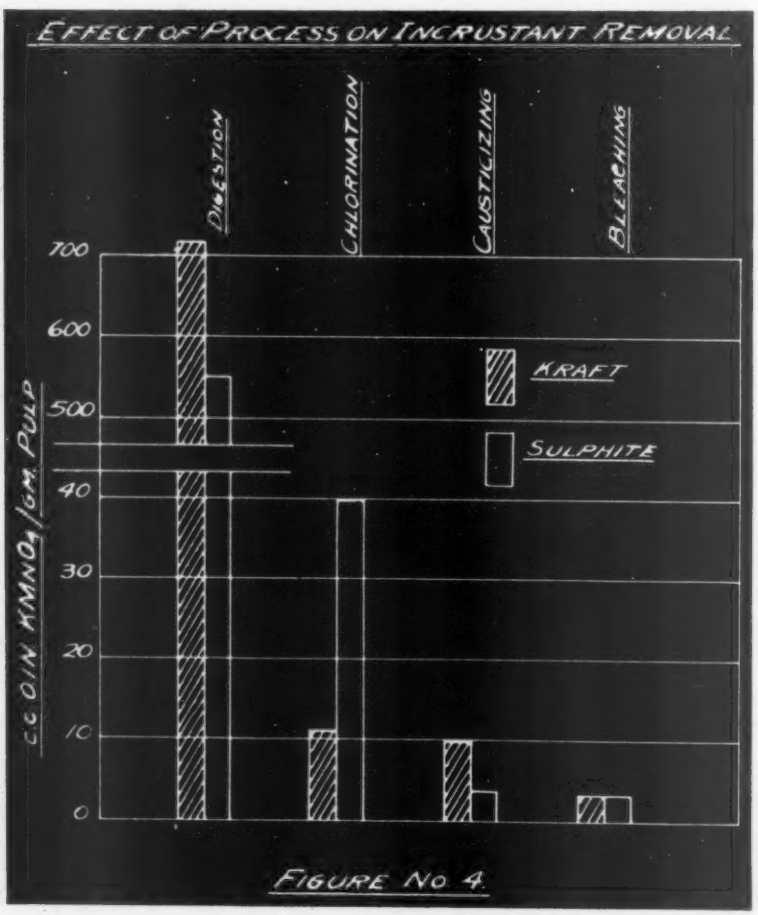


FIGURE NO 4.

remainder of the reaction than for caustic reactions at room temperature. The pH drops rapidly at the higher temperature. On occasions it has been suggested that this might be due to the greater formation of neutral sodium resinates in a much shorter period. The presence of atmospheric oxygen may have some effect on the accelerated action at these higher temperatures. Table IV.

A Comparison of Incrustant Removal Through Pulping and Refining Process

● The effectiveness of the several chemical processes used for pulping and purifying the cellulose fiber are illustrated in Figure 4. It is quite obvious that digestion or fibre liberation is responsible for most of the incrustant dissolution. The temperature and pressure as well as the chemical itself play a large part in this removal especially so during the penetration period in loosening the binding substances, i. e. lignin and pitchy substances.

The efficiency of the methods employed in obtaining fibre isolation and purification may be shown on a percentage basis in the following table. (Table V.)

From an examination of these data one will readily notice a very marked drop in incrustant removal efficiency in the chlorination stage of the kraft process. This evidence is substantiated by the bleachability test which drops to a much lesser degree than in the sulfite process. On the other hand, the caustic treatment of kraft pulp indicates a greater incrustant removal efficiency than on sulfite pulp.

Effect of Purification on Rate of Incrustant Removal and Chemical Consumed

During the chemical purification processes, i. e., chlorinating, causticizing, and bleaching, the quantity and rate of chemicals consumed, incrustant removal and pH were studied (Table 1).

Figures 5, 6 and 7 present an interesting study in comparing the incrustant removal with the chemicals consumed in bleaching Hard and Soft Sulfite and Kraft pulp. In comparing the incrustant matter removed with the chemicals consumed in bleaching Kraft, Figure 5, the chlorination treatment is not as effective as the causticizing or bleaching processes. On the other hand, Figure 6, Hard Sulfite, exhibits a reverse trend; the chlorination treatment being the most effective for incrustant removal.

Soft sulfite (Figure 7) due to a greater removal of incrustants during digestion indicates a lower Incrustant No. than hard sulfite during the chlorination period. However, if the chlorine consumed is compared with the effectiveness of removal it will be found to be nearly the same for these two types of sulfite pulp. In the caustic treatment illustrated in Figures 5, 6 and 7, the soft sulfite displayed greater incrustant removal than the hard sulfite and kraft pulps, due to the higher temperature and chemical concentration employed.

During the bleaching stage these three types of pulp all show lower incrustant numbers, which is an indication that the purification treatments are reaching completion. The maximum removal is early in the bleaching reaction of the sulfite pulp. An examination of the bleaching action on Kraft pulp, however, would lead one to believe that incrustant removal was not complete, justifying at least one additional bleaching stage to reach the maximum amount of removal and a purer fiber. As in the causticizing treatment, temperature and chemical concentration exert an influence on the removal rate from the fibers when bleaching.

TABLE II

Data relative to rate of kraft incrustant removal

Time, Hours	0	1	1½	2	2½	2.55
Incrustant No.	0	218	338	715	715	715
#Na_2O Consumed	0	10	40	56	63	79

TABLE III

Data relative to rate of sulfite incrustant removal

Tme, Hours	0	¼	½	¾	1	1½	2	3	4	5	6	7	8¼	9¾
Incrustant No.	65	65	80	90	132	145	....	150	175	188	240	405	503	555
#Sulphur consumed	0	....	....	....	60	....	75	105	140	173	237	305	315	315

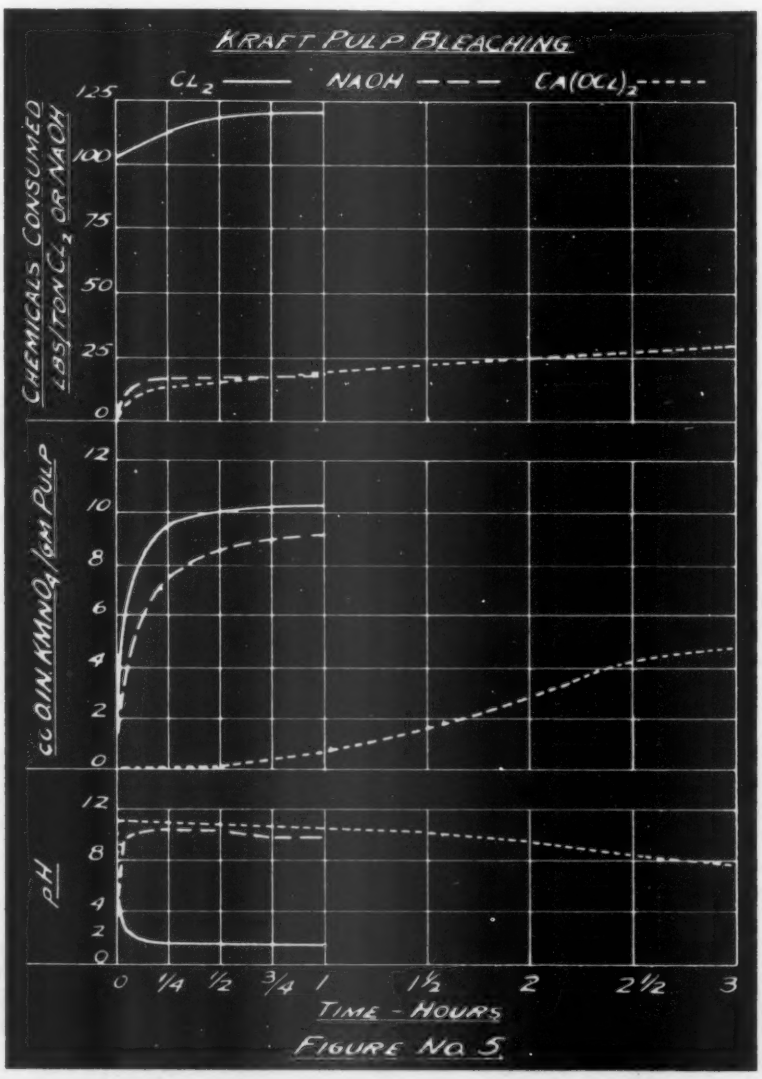


FIGURE NO. 5

TABLE IV

Caustic Reaction Curve Data

Temperature	77°F.						
Time (in minutes)	1	3	6	9	12	15	60
#/Ton NaOH Consumed	10.5	12.5	13.5	14.7	14.8	14.9	15.6
Incrustant Number	5.1	5.3	....	....	5.7	5.9	6.9
pH	11.4	....	11.2	11.1	11.1	11.0	10.7
Temperature	140°F.						
Time (in minutes)	1	3	6	9	12	15	60
#/Ton NaOH Consumed	10.5	12.5	13.8	15.2	16.5	17.5	19.2
Incrustant Number	6.1	6.7	7.2	7.5	8.2	8.6	10.6
pH	11.3	11.3	11.1	11.0	10.5	10.2	9.5

TABLE V

	Kraft Incrustant Removal Efficiency	Kraft Bleachability % Cl_2	Sulfite Incrustant Removal Efficiency	Sulfite Bleachability % Cl_2
Digestion	96.7%	8.60%	92.3%	6.60%
Chlorination	1.5	3.37	6.6	0.79
Causticizing	1.4	2.11	0.7	0.22
Bleaching	0.4	----	0.4	----

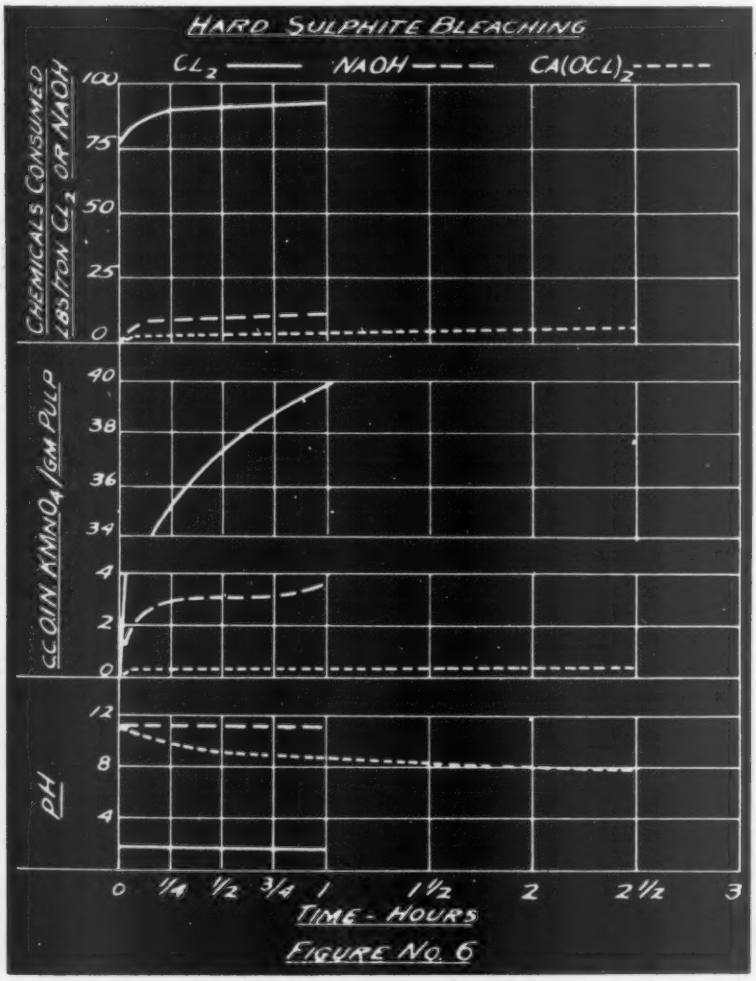


FIGURE NO. 6

The foregoing experiments seem to indicate that the removal of the incrustants from the cellulose fiber during the digestion and supplementary purification stages can be measured, resulting in a better understanding of the effectiveness of these processes.

Acknowledgment

● The writer wishes to express his gratitude for the services rendered in compiling this paper to the St. Regis Kraft Co., Tacoma, Washington, and to the Weyerhaeuser Timber Co., Pulp Division, Everett, Washington.

References

[1]Samuelson, S. **The Bleaching of Sulfite Pulp.** Technical Section of Paper Maker's Association of Great Britain and Ireland. 1937.

[2]Wiles, R. H. **Permanganate Number of Pulp.** Technical Association Papers; page 146, Series 17. 1934.

[3]Jayme, G. and Stienmann, R. **Alkaline Treatments of Pulp and Their Influence on Swelling Characteristics.** Papier Fabr. 35, (Tech. Teil) 337-364. 1937.

[4]Palmrose, G. V. **Mill Test for Exact Determination of Combined SO_2.** Technical Association Papers, page 309, Series 18. 1935.

Box Makers Hold Seattle Meeting

● A joint meeting of the members of the Northwest Division of the Pacific Coast Paper Box Manufacturers' Association was held in Seattle, Washington, on Saturday, April 23rd, in the Washington Athletic Club.

Thirty-six members and representatives of members' firms were present, and this constitutes the largest gathering of its kind in many years, the occasion being a visit by Hugh Peat, secretary of the Coast Association, who was scheduled to speak on the progress being made on the program for the annual convention which is to be held at Hotel Del Monte, California, commencing July 11th, and on association matters generally.

Arrangements for the meeting were made by R. W. Fenton, Seattle, secretary, and Myer C. Rubin, Portland secretary.

After dinner, Mr. Oscar Bergland, vice-president of the Pacific Coast Association, called the meeting to order. Mr. Bergland extended a welcome to members and guests and remarked on the excellent attendance which, he stated, was the largest that had ever attended a joint meeting of Washington and Oregon box manufacturers. He stated that this must be a tribute to the guest of the evening who, he stated, had been untiring in his efforts on behalf of Pacific Coast manufacturers.

He then called upon Mr. Peat to address the members. The speaker spoke on the subject of cooperation and of loyalty of members to their local associations. He pointed out that although the Pacific Coast Association was doing good work in a general way for all members, nevertheless, it was in the local association that the real work had to be done on behalf of local manufacturers since the local manufacturers had to contend with local problems which could not be handled by the Pacific Coast Association.

At the conclusion of his scheduled talk, Mr. Peat spoke on the progress that was being made by the various committees in developing a program for the annual convention which is to be held in July. He stated that without question the convention this year would prove as successful as it had last year both from a business standpoint and also in the degree and quality of entertainment which would be provided by the entertainment committee. At the conclusion of the talk Mr. Bergland thanked the speaker on behalf of those present for his attendance and for the information he had placed before the members.

• Mr. Myer C. Rubin, Portland secretary, drew the attention of the chairman to the fact that several faces were not present at this meeting and referred to some of the old-timers who had passed away, mentioning John R. Holman, Portland; Frank C. Stettler and Theodore Rothchild, both of whom were connected with the F. C. Stettler Manufacturing Company, Seattle; Otis Hincher, Seattle; A. J. Schoephoester and Frank Wright, all of whom had passed away within the past few years. The chairman called for a moment's quiet in reverence to the dead.

It was also mentioned that Harry Simmons of the Northwestern Paper Box Company, Seattle, had undergone an... was now recovering from a serious operatiton and a resolution of regret for his misfortune was passed with sincere wishes for his steady progress toward recovery.

The visiting coast association secretary, Hugh Peat, was delegated to convey these sentiments to Mr. Simmons personally.

Several other matters of interest in connection with the forthcoming convention were discussed, after which the meeting adjourned and the balance of the evening was spent in entertainment.

Following is a list of those who were present at the meeting: J. A. Ainslie, Ainslie Mfg. Company, Spokane, Washington; E. J. Farina, Fibreboard Products Co., San Francisco, California; also from the same company, Troy L. Carey, W. D. Simpson, Harold Robbins, Earl Cone, and Robert Little, Seattle; C. A. Morgan and Geo. Langtry, Portland; Walter Grigsby, Grigsby Bros., Portland; Oregon; Felix Delschneider, Oregon Paper Box Company, Portland, Oregon; Payson Thompson, Portland Paper Box Company, Portland, Oregon; Harry Springer and Carl Scott, Pacific Strawboard Company, Longview, Washington.

J. L. Norie and Mr. Robinson, Coast Carton Company, Seattle, Washington; Tom Grigsby and Frank Ferguson, Eagle Paper Box Company, Tacoma, Washington; L. D. Hincher, N. F. Hincher, Ray Cunningham and R. W. Eddy, Hincher-Standard Paper Box Company, Seattle, Washington; W. Culwell and Frank E. Wright, Keystone Paper Box Company, Seattle, Washington.

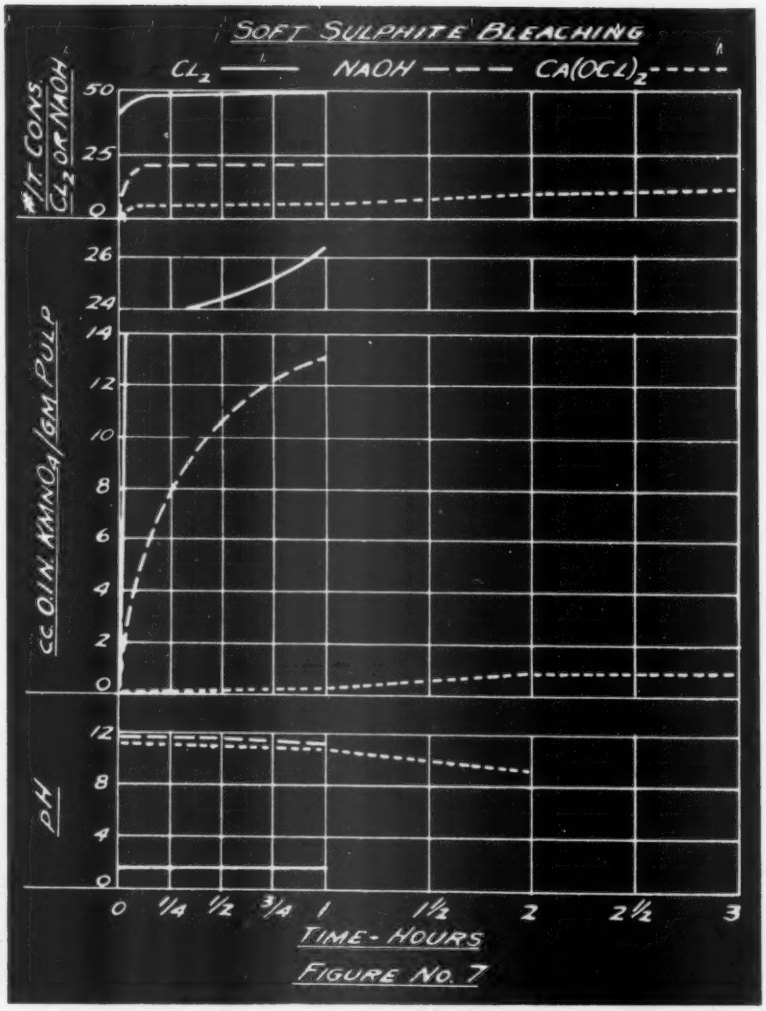


FIGURE NO. 7

J. S. Scully and Jack McGrath, Puget Sound Paper Box Company, Seattle, Washington; C. E. Ridgway, Bill Wheeler and E. A. Weider, Ridgway Lithograph Company, Seattle, Washington; Joe O'Reilly, Standard Carton Company, Tacoma, Washington; Oscar Bergland and Messrs. Sumbardo and Krippner, Union Paper Box Company, Seattle, Washington; Hugh Peat, secretary, Pacific Coast Paper Box Manufacturers' Association; Myer C. Rubin, secretary, Portland Paper Box Manufacturers' Association; R. W. Fenton, secretary, Seattle Paper Box Manufacturers' Association.

Fleischhacker Buys Boxboard Products

• Announcement has been made that on May 18th, Boxboard Products, folding box manufacturers, located at 200 Paul Avenue, San Francisco, was purchased by the Fleishhacker Paper Box Company, 401 Second Street, San Francisco.

It is the intention of the Fleishhacker Paper Box Company to continue to serve the former customers of Boxboard Products, and in every way to maintain the good will which has been built up over many years.

Fleishhacker Paper Box Company will now feature the "Cumlokt" box, which Boxboard Products formerly possessed exclusively, and it is understood that an ambitious sales program is being mappped to promote the "Cumlokt" box.

While Boxboard Products have built a large volume of sales on "Cumlokt" boxes, Wm. J. O'Donnell, general manager of the Fleishhacker Paper Box Company, is confident that the sales on this item can be greatly increased and arrangements are already under way for an extensive sales campaign on "Cumlokt" boxes.

Plan Western Chemical Congress in 1939

• Twenty-five American societies and associations, eight foreign organizations and a number of governmental agencies and bureaus are being invited by a California committee to join in a western chemical congress, which is is proposed to convene in San Francisco, California, during the 1939 Golden Gate International Exposition.

Heading the committee, which as yet is not completely formed, is Dr. Rene Engel, San Francisco, consulting mining geologist and engineer. Associated with him to date are the following:

Walter W. Bradley, state mineralogist, California Division of Mines.

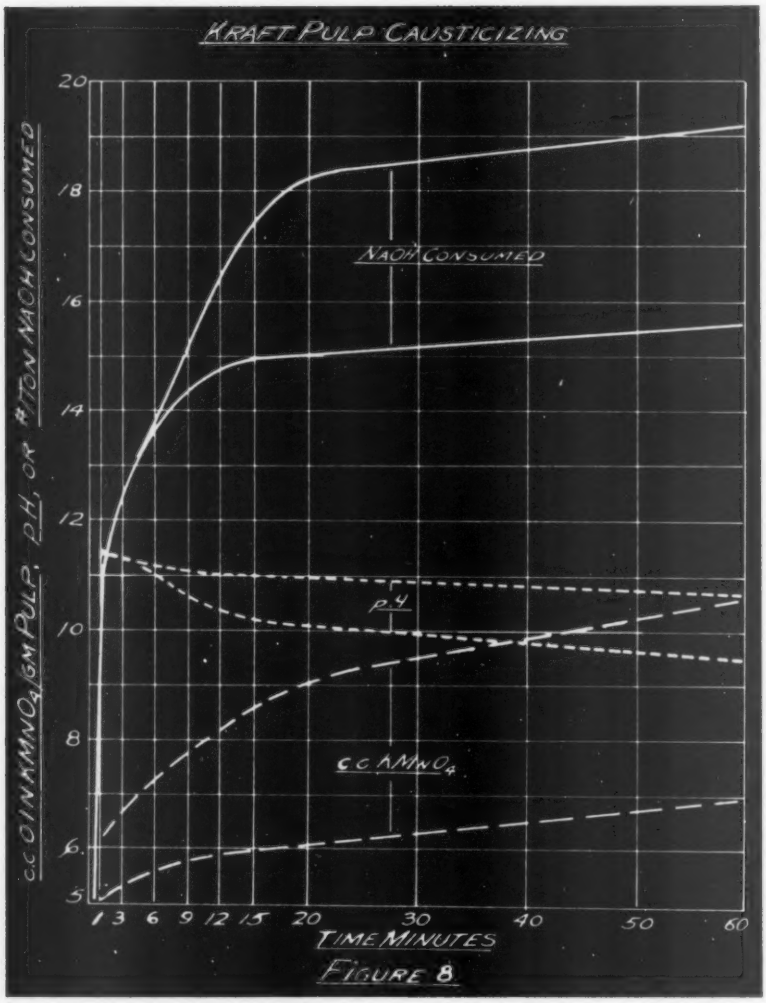


FIGURE 8

Clare S. Chaffee, ceramic engineer with Owens-Illinois Pacific Coast Co., and chairman of Northern California section, American Ceramic Society.

Dozier Finley, director of technical research, The Pabco-Paraffine Companies, Inc.

Dr. Wilhelm Hirschkind, vice-president in charge of research, Great Western Electro-Chemical Co., and vice-chairman, California Section, American Chemical Society.

F. T. Letchfield, consulting engineer, Wells Fargo Bank & Union Trust Co.

Dr. Paul D. V. Manning, chemical engineer, Western Condensing Co.

Albert M. Paul, president, California Products Co., and chairman, California Chemurgic Council.

Dr. Merle Randall, professor of chemistry, University of California.

Emory E. Smith, president, Smith, Emery & Co.

Frank H. Probert, dean, College of Mines, University of California.

Theme of the proposed gathering would be the improvement and enlargement of western chemical process industries. A two-fold approach is planned: (a) discussion of materials and opportunities for the establishment of new chemical activities in the 11 western states; (b) widening of western markets for chemical products, with especial attention to the relatively-unexploited consuming centers which border other parts of the Pacific Rim, including the Orient, Australia, etc.

Two types of meetings are proposed. Individual societies and organizations would gather in separate discussion groups to transact routine business, to become better acquainted within themselves, and to attack problems of interest only in their own fields. In addition, general sessions would be held to hear addresses on matters of broad and general concern.

American societies which the committee believes may wish to take part in the congress include the following:

American Chemical Society, American Ceramic Society, American Institute of Chemical Engineers, American Institute of Nutrition, American Drug Manufacturers Association, American Gas Association, American Oil Chemists Society, American Pulp & Paper Association, American Petroleum Institute, American Pharmaceutical Association, American Society of Biological Chemists, American Society of Metals, American Society for Testing Materials, Association of Official Agricultural Chemists, Association of Western Wine Producers, Brewers Institute, Electrochemical Society, National Farm Chemurgic Council, National Fertilizer Association, National Lime Association, National Lumber Manufacturers Association, Portland Cement Association, Soil Science Society of America, Technical Association of the Pulp and Paper Industry, Wood Chemical Institute.

Swedish Pulp Firm Reports Increased Profit

● The prominent Swedish manufacturer of sulphite and sulphate pulp Uddeholms, A. B., reports for 1937 a profit after all charges of 6,010,000 kronor against 5,040,000 kronor in 1936 and 4,120,000 kronor in 1935. (Kronor $0.2552.)

In 1937 the Uddeholms organization produced 49,400 tons of sulphite pulp, of which almost all is said to be of rayon grade, compared with 41,800 tons in 1936, 35,550 tons in 1935 and 33,850 tons in 1934. Sulphate pulp production in 1937 was 52,700 tons against 41,800 tons in 1936; 35,550 tons in 1935, and 33,850 tons in 1934.

The company's Skogshall sulphite mill has been enlarged by another 7,000 tons bringing capacity up from 50,000 to 55,000 tons annually.

Swedish Mills Profitable in 1937

● Reports from a number of leading Swedish producers of wood pulp and paper indicate that 1937 was a prosperous year for the industry. All of these companies, which include some of the largest in Sweden, report a net profit from their 1937 operations, and a number of them have increased their 1937 dividend.

SPS Reduces Pulp Export Quotas

● At a meeting of the European sulphite pulp organization SPS at Stockholm on April 6 a decision was reached to reduce 1938 export quotas by 20 per cent in view of existing market conditions. During recent months so little sulphite pulp has been sold that prices have fallen off as much as 40 per cent. The annual export quota of the members of SPS amounts to approximately 3,100,000 metric tons (metric ton—2,204.6 pounds) of sulphite pulp, of which the Finnish share is approximately 25 per cent. For Finland the export quota reductiton will mean that the sulphite pulp mills will work on a reduced schedule or that all of them will close for a short period.

The SPS agreement expires at the end of the current year, and a meeting will be held in Stockholm in June to discuss this matter. In view of the current uncertainty, another similar agreement is considered essential for the stabilization of the market. The membership of SPS comprises manufacturers of sulphite pulp in Finland, Sweden, Norway, Germany, Austria, Czechoslovakia and Memsl. It will be recalled that the output of kraft, greaseproof and sulphite paper has already been curtailed and prices in some instances reduced because of existing market conditions.—American Consulate, Helsinki.

First Paper Trade Conference Held at Del Monte

Informal meeting May 12-14th replaces annual convention of recently dissolved Pacific States Paper Trade Association

ANOTHER Pacific Coast paper trade convention has come and gone, leaving pleasant memories behind.

This year, however, it was not the annual gathering of the Pacific States Paper Trade Association, which has been held for twenty years.

The Pacific States body just passed its China anniversary and disbanded. This meeting was called by the brand new Pacific Coast Paper Conference and attracted a large number of eastern and western paper jobbers, manufacturers and members of allied and supply lines.

The meeting was held at Del Monte May 12-14 and was presided over by Victor E. Hecht, San Francisco, vice-president of the Zellerbach Paper Company. Mr. Hecht was the last president of the Pacific States organization and carried the gavel over into the new association. Secretary of the convention was Edward L. O'Neil, San Francisco.

It was just an informal, round-table gathering of paper people. No minutes were taken and no prepared papers given. There was a program, however, of discussions and talks by jobbers on subjects of mutual interest.

● Jack W. Thompson, manager of the Seattle division of Blake, Moffitt & Towne, was elected to serve as chairman for the coming year and Bert Reynolds of Los Angeles was named secretary. Mr. Reynolds is secretary of the Los Angeles Paper Trade Conference.

As usual, there was an entertainment program for the men and women. The outstanding number on this was the 1938 Pacific Coast Paper Manufacturers Golf Tournament, put on for the convention by eastern and western mill men.

G. J. Ticoulat, San Francisco, Crown Willamette Paper Company, not only headed the golf committee but also won the top prize, winning Class A and Mrs. Ticoulat won the ladies' tournament.

On Thursday evening of convention week was held the annual joint meeting of merchants and manufacturers and one of the pleasant memories of this was a tribute paid to Isadore Zellerbach, San Francisco, veteran head of the Crown Zellerbach Corporation, who, on May 17, celebrated his fiftieth anniversary in the paper business.

When Mr. Zellerbach was introduced by Chairman Hecht, the hundred or more men in the room got to their feet and applauded loudly.

● "It has been a most pleasant fifty years, " Mr. Zellerbach said. "I have lived paper day and night and my one ambition in life has been to create good will among our competitors and our employes. We have tried to be fair and honest.

"Everybody should be industry-minded and do everything possible to make this a field of activity in which honesty and fair dealing prevails."

Mr. Zellerbach introduced to the meeting Horace A. Moses, president of the Strathmore Paper Company, West Springfield, Mass., as being head of the largest fine paper manufacturing company in the world. Mr. Moses was attending his first Pacific Coast paper convention, accompanied by his brother, Mark Moses of Ticonderoga, N. Y.

Chairman Hecht called upon other eastern visitors present to stand and be introduced. These were George Olmsted, Jr., S. D. Warren Co., Boston; W. J. Garrity, Munising Paper Co., Chicago; M. C. Dobrow, secretary of the Writing Paper Manufacturers Association, New York; E. R. Leonhard, Paterson Parchment Paper Co., Bristol, Pa.; J. H. Miller, general manager Whiting-Plover Paper Co., Stevens Point, Wis., and F. H. Savage and D. H. Newell, International Paper Co., New York.

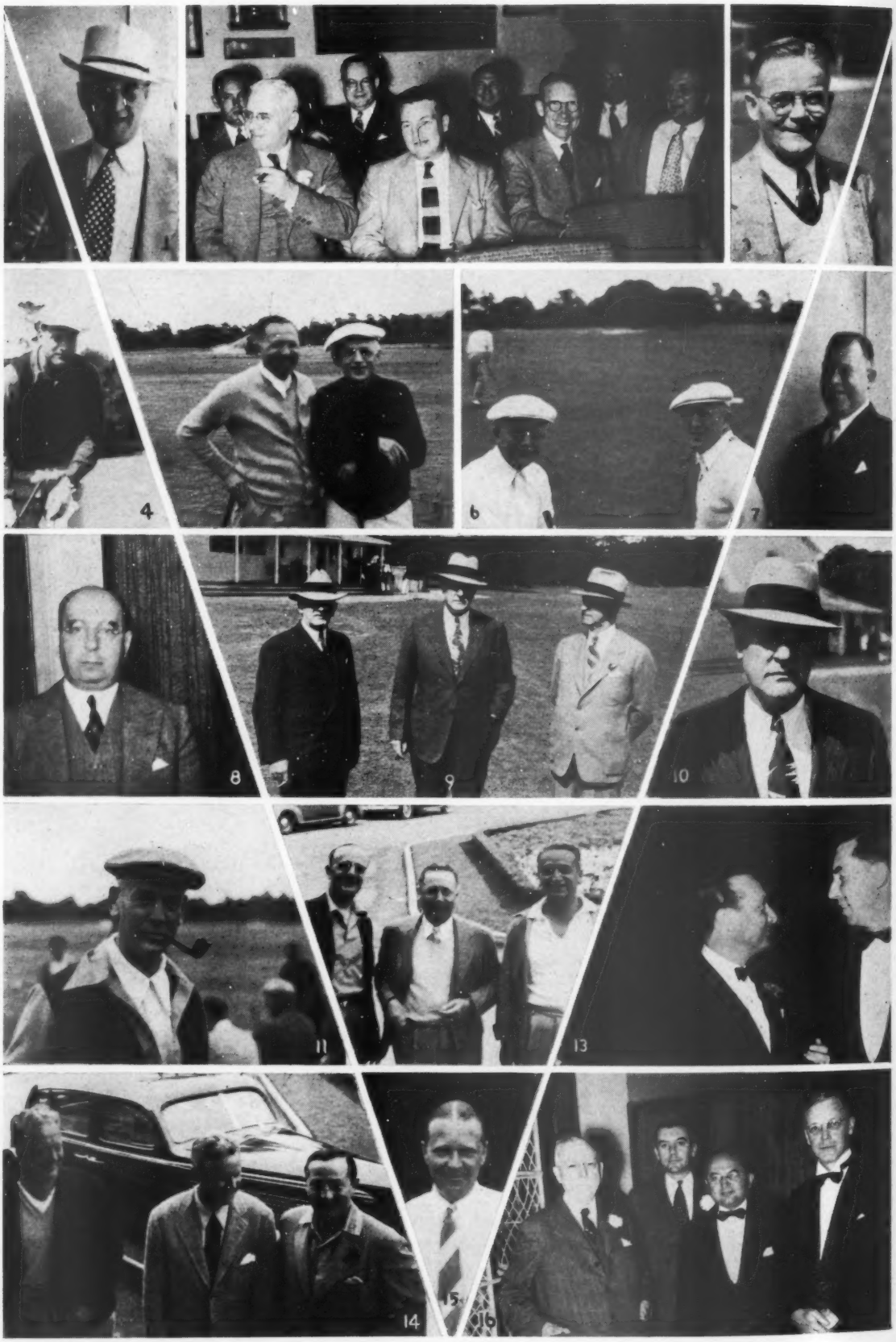
Almon E. Roth, San Francisco, president of the Waterfront Employers Association, was scheduled to deliver the address at the merchants and manufacturers' meeting but strike conditions in Los Angeles prevented him from attending. Chairman Hecht didn't know until a few hours before the meeting that Mr. Roth couldn't attend but, with the aid of the Hotel Del Monte management, a substitute speaker was found on the golf links there. He was Harold Mack, a recognized writer and speaker in economic subjects and head of McDonald & Co., New York and San Francisco stock and bond brokers just before the other depression. Mr. Mack outlined the economic forces now clashing throughout the world and predicted that the bottom had been reached in the present recession.

● One of the customs of the Del Monte meetings is to pause in memory of those paper folks who died during the preceding yaer. Frank C. Stratford, San Francisco, Zellerbach Paper Company, was chairman of the necrology committee.

Tribute was paid the following deceased: Roy E. Banks, Long Beach Paper & Notion Co., who died July 6, 1937; Robert B. Parker, president Dwight Brothers Paper Co., Chicago, Nov. 14, 1937; Walter E. Dwight, founder Dwight Brothers Paper Co., August 7, 1937; Albert P. Herrlinger, Herrlinger Paper Co., Cincinnati, July 9, 1937; Joshua C. Mallalieu, president Geo. W. Miller & Co., New York, and former president of the National Paper Trade Association, July 30, 1937; Jos. T. Alling, chairman of board of The Alling and Cory Co., Rochester, N. Y. and former president of the National Paper Trade Association.

Arthur W. Blackman, Boston, former president of the National Paper Trade Association; A. R. Troetcher, superintendent Camas plant Crown Zellerbach Corporation, Jan. 7, 1938; George Berkey, vice-president Crown Zellerbach Corporation, Jan. 13, 1938; A. B. Galloway, general sales manager, Oregon Pulp & Paper Co. and

Paper Men at Del Monte



Western Paper Converting Co., June 7, 1937; Howell B. Howard, Howard Paper Co., July 9, 1937; W. J. Raybold, president Rising Paper Co., April 21, 1938; A. B. Daniels, president L. L. Brown Paper Co., March 5, 1938; Robert T. Houk, vice-president, Mead Corporation, March 10, 1938.

A. W. Peterson, manager San Jose division, Blake, Moffitt & Towne, Nov., 1937; J. Clem Reis, manager Phoenix division Zellerbach Paper Co., died in fall of 1937.

Business Sessions

● The convention sessions were divided into two day meetings, Thursday for merchants only and one morning session Friday for merchants and manufacturers.

The subjects and the members who led the discussions follow: "Study and Use of National Paper Trade Association's Sale Charts and Statistics."—H. D. Bean, San Francisco, General Paper Co.

"Report on the February N. P. T. A. Meeting," O. W. Mielke, San Francisco, Blake, Moffit & Towne.

"Review of Activity of Merchandising Committee of the N. P. T. A."—J. W. Thompson, Seattle.

"Inventory Control—Slow Moving Items,"—A. W. Akers, Jr., Seattle, Zellerbach Paper Co.

"Traffic Problems"—Ed Israel, San Francisco, California Wiping Materials Co.

"Salesmen's Compensation" — R. E. Le Grant, Tavernor & Fricke, Los Angeles.

"Sampling"—Arthur W. Towne, San Francisco, Blake, Moffit & Towne.

"Postal Regulations"—Arthur J. Nelson, Los Angeles, Ingram Paper Co.

"Buying Trends" — A. Gordon, San Francisco, Acme Paper Co.

"Small Order Evil and Small Units in Exchange Business"—F. E. Jeffries, Tacoma Paper & Stationery Co.

"Delivery Costs and Free Delivery Problem"—P. G. Cann, Los Angeles.

"The Every Day Effect of Legislation on Business," Attorney H. Arthur Dunn, San Francisco.

"Employe Relations" — E. A. Breyman, San Francisco, Zellerbach Paper Co.

"Tax Matters"—V. G. Gendron, San Francisco, Zellerbach Paper Co.

The conference adjourned with a vote to meet again at Del Monte in May of 1939.

Golf Tournament Winners

● In charge of the golf tournament was the millmen's committee made up of G. J. Ticoulat, M. M. Baruh, Andrew Christ, Jr., W. J. Gray and C. Francis Jenkins.

Results and trophy donors follow:

CLASS A — Winner — G. J. Ticoulat, donor, Everett Pulp & Paper Co. Runner-up — Andrew Christ, Jr., donor, Graham Paper Co.

CLASS B—Winner—Victor N. Savale, donor, Western Waxed Paper Co. Runner-up—W. D. McWaters, donor, Crown Willamette Paper Co.

BEST NET FOR 18 HOLES—Winner—Wm. E. Taverner, donor, Longview Fibre Co. Runner-up—R. A. Gates, donor, Geo. La Monte & Son.

APPROACH AND PUTTING CONTEST—Winner—William L. Shattuck, donor, Inland Empire Paper Co. Runner-up—C. L. Shorno, donor, The Menasha Products Co.

BLIND BOGEY — Winner — R. A. McDonald, donor, Pacific Coast Envelope Co. Runner-up—C. Francis Jenkins, donor, Brown Paper Goods Co. of Calif.

Those in the Snapshots

In No. 1—SI WHITING, Pacific Coast Sales Manager of the Inland Empire Paper Company of Millwood, Washington. No. 2—Front row, BERT REYNOLDS, 1938 secretary of the Pacific Coast Paper Conference; LINCOLN B. OLDER, Brown Company, San Francisco; B. P. (Doc) JAGGARD of the Hammermill Paper Company, San Francisco; JOE FAIRCHILD, Pacific Coast Envelope Company, San Francisco; First three, back row—WILLIAM TAVERNER, Taverner & Fricke, Los Angeles; PHIL ISLER, of the Paper & Bag Institute of the Pacific Coast, San Francisco; R. E. LeGRANT, Tavener & Fricke, Los Angeles. No. 3—LLOYD RICHES, General Manager, Western Paper Converting Company, Salem, Oregon.

No. 4—G. J. TICOULAT, Crown Willamette Paper Co., San Francisco, Golf Chairman. No. 5—Left to right, BOB CHRIST of The Dobeckmun Co., Oakland, and his father, ANDREW CHRIST, JR., Western Waxed Paper Co., Oakland. No. 6—EUGENE A. BREYMAN and V. G. GENDRON of the Zellerbach Paper Company, San Francisco. No. 7—JOHN H. SMITH, Executive Vice-President and General Manager Hawley Pulp & Paper Company, Portland. No. 8—VICTOR E. HECHT, Vice-President Zellerbach Paper Co., San Francisco. No. 9—FRANK E. JEFFERIES, Manager Tacoma Paper & Stationery Co., Tacoma, Division of Blake, Moffitt & Towne; JACK W. THOMPSON, Manager, Blake, Moffitt & Towne, Seattle; and, O. W. MIELKE, General Manager of Blake, Moffitt & Towne, San Francisco.

No. 10—JACK W. THOMPSON, Manager Blake, Moffitt & Towne, Seattle, New Chairman of the Conference. No. 11—A. A. ERNST, Everett Pulp & Paper Company, Los Angeles. No. 12—Left to right, BOB GATES, Everett Pulp & Paper Company, San Francisco; W. J. GRAY, Pacific Coast Manager, Paterson Parchment Paper Co., San Francisco; and AL. KENSEY, The Envelope Corporation, San Francisco. No. 13—HAROLD L. ZELLERBACH, President of Zellerbach Paper Company, San Francisco, and GEORGE OLMSTED, Jr., of the S. D. Warren Company, Boston.

No. 14—A. H. HOOKER, Jr., ROBERT L. MURRAY and GEORGE W. HOUK, of the Hooker Electrochemical Co. Mr. Murray is a director of the company and visited the Tacoma plant following the Del Monte meeting. No. 15—E. D. LEONHARD, Assistant General Manager of the Paterson Parchment Paper Co., Bristol, Pa. No. 16—Left to right, H. A. MOSES, President of the Strathmore Paper Co., West Springfield, Mass.; T. C. MACORMACK, Pacific Coast representative for Strathmore, San Francisco; MORRIS C. DOBROW, Secretary of the Writing Paper Manufacturers Association, New York, and J. L. MURRAY, Sales Manager of the Everett Pulp & Paper Company, San Francisco.

LADIES

Winner — Mrs. G. J. Ticoulat, donor, The Paterson Parchment Paper Co. Runner-up—Mrs. Robert J. Christ, donor, Grays Harbor Corporation.

BEST NET FOR 9 HOLES—Winner—Mrs. R. A. Gates, donor, Hawley Pulp & Paper Co. Runner-up—Mrs. J. D. Zellerbach, donor, Southern Kraft Corp.

PUTTING CONTEST—Winner Mrs. E. A. Breyman, donor Brown Company. Runner-up—Mrs. Claire Saroni, donor, Union Bag & Paper Co.

MIXED TWO-BALL FOURSOME—Winner—Mrs. C. Francis Jenkins and W. J. Gray, donor, Columbia River Paper Mills and subsidiaries. Runner-up—Mrs. Andrew Christ and G. J. Ticoulat, donor, Fibreboard Products, Inc.

BLIND BOGEY—Winner—Mrs. R. A. McDonald, donor, The Adhesive Products Co.

The usual convention banquet was skipped this year and the golf prizes were awarded at a cocktail party Saturday night, at which Mr. Ticoulat acted as master of ceremonies. W. J. Gray, Paterson Parchment Paper Co., San Francisco, handled the Calcutta Pool.

April Newsprint Production

● Production in Canada during April, 1938, amounted to 200,794 tons and shipments to 214,182 tons, according to the Newsprint Service Bureau. Production in the United States was 58,836 tons and shipments 57,348 tons, making a total United States and Canadian newsprint production of 259,630 tons and shipments of 271,530 tons. During April, 20,896 tons of newsprint were made in Newfoundland, so that the total North American production for the month amounted to 280,526 tons. Total production in April, 1937, was 405,937 tons.

The Canadian mills produced 314,446 tons less in the first four months of 1938 than in the first four months of 1937, which was a decrease of twenty-seven per cent. The output in the United States was 52,058 tons or sixteen and seven tenths per cent less than in the first four months of 1937, in Newfoundland 26,890 tons or twenty-two and seven tenths per cent less, making a total decrease of 393,394 tons, or twenty-four and six tenths per cent.

Stocks of newsprint paper at the end of April were reported at 174,618 tons for Canadian mills and 28,015 tons for United States mills, making a combined total of 202,633 tons compared with 214,533 tons on March 30, 1938.

British Pulp Imports Increase

● Imports of chemical wood pulp by Great Britain during the first quarter of 1938 increased 57,690 metric tons or 35 per cent over the first three months of 1937. The first quarter 1938 imports of dry chemical wood pulp were 223,214 metric tons against 165,524 metric tons in the same period in 1937.

Imports of wet chemical pulp rose from 100,810 metric tons in the first quarter of 1937 to 109,178 metric tons in the first period of this year.

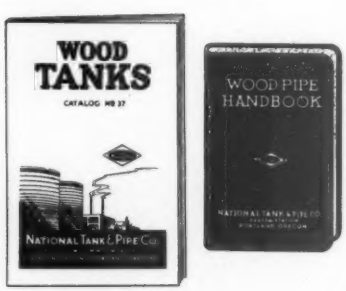
Wet and dry mechanical pulp imports increased from 271,674 metric tons in the first 1937 quarter to 316,125 metric tons in the same quarter of 1938.

These statistical figures are from the Svensk Papperstidning published in Stockholm, Sweden.

New Wood Tank and Pipe Handbook Available

● Containing data, designs and reference tables which in many instances have not hitherto been published, National Tank & Pipe Company, Kenton Station, Portland, Oregon, has just issued two catalogs, one describing wood pipe; the other, wood tanks.

These catalogs will be of special interest to the pulp and paper industry because wood pipe and tanks have long since demonstrated their usefulness and economy in this field. The inside of wood pipe and tanks, being smooth and clean, does not contain anything that can slough off and discolor the pulp.



The Wood Pipe Handbook contains 275 pages and over 150 illustrations. The subject matter ranges from an authoritative section on hydraulics to a description of the manufacture and application of wood pipe. Especially valuable is a section in which problems encountered by engineers are solved both scientifically and through the use of flow tables prepared especially for this handbook. In convenient pocket size, this book will prove exceedingly handy as well as useful.

Wood Tank Catalog No. 37 describes tank installations of a wide variety. It shows how tanks and their foundations are designed and erected. Detail sketches make perfectly clear many features of tank construction not usually published.

Copies of these catalogs may be obtained on request to the company at Portland, Oregon.

March Newsprint Production

● Production in Canada during March, 1938, amounted to 224,604 tons and shipments to 182,687, according to the Newsprint Service Bureau. Production in the United States was 67,864 tons and shipments 66,138 tons, making a total United States and Canadian newsprint production of 292,468 tons and shipments of 248,825 tons. During March 25,354 tons of newsprint were made in Newfoundland, so that the total North American production for the month amounted to 317,822 tons. Total production in March, 1937, was 415,454 tons.

The Canadian mills produced 218,616 tons less in the first three months of 1938 than in the first three months of 1937, which was a decrease of twenty-five and two tenths per cent. The output in the United States was 32,275 tons or thirteen and eight tenths per cent less than in the first three months of 1937, in Newfoundland 17,092 tons or nineteen and five tenths per cent less, making a total decrease of 267,983 tons, or twenty-two and five tenths per cent.

Stocks of newsprint paper at the end of March were reported at 188,006 tons for Canadian mills and 26,527 tons for United States mills, making a combined total of 214,533 tons compared with 170,890 tons on February 28, 1938. Considerable tonnage was accumulated at points from which water shipments will be made upon the opening of navigation.

Leipzig Fair Shows New Products

● At the Leipzig (Germany) Spring Fair a number of new paper and cellulose products were exhibited. According to the American consul one novelty was paper covered with colored stones. Other new papers had felt like surfaces. An imitation leather wall paper was offered.

In general there has been a rather marked trend toward economy in the use of packing materials in Germany, and the "combat with waste" campaign has been urged with regard to many materials which are lacking in the country. Novel containers of transparent synthetic material, both colorless and colored, for toothbrushes, cigars, cigarettes, and other merchandise which it is necessary to protect against external influence were among the displays. One novelty was tubes of cellophane with glass-like clarity for creams and liquids. These tubes were provided with a bakelite base and were featured primarily as an expedient to save metals. Large liquid containers of the demi-john variety surrounded by a new pliant material to replace wicker formerly employed, were also on display. Exhibitors claim that liquids can be transported long distances in such containers without the use of further packing material, framework, etc.

Hatch Granted Patent on Vanillin Process

● Raymond S. Hatch, research director of the Weyerhaeuser Timber Company, Longview, was recently granted a United States patent on a method of producing vanillin from sulphite waste liquor. The patent was assigned to the Weyerhaeuser Timber Company.

Trade Talk

of Those Who Sell Paper in the Western States

L. A. Paper Mill Men Plan Activities

● The Paper Mill Men's Club of Southern California met Thursday noon, May 26, at the Mayfair Hotel for a luncheon and business session. Dewey Megel, newly elected president, was unable to be there, having been called to San Francisco on business. Vice-president George Weiman, on the sick list, was unable to be in attendance either. Al Hentschel, secretary, presided.

Committees and a tentative calendar for the coming year's activities were announced. Charles Spies was appointed chairman of the Hi-Jinks committee which puts on the annual fall party for the jobbers. A new committee was created, a membership committee, and A. A. Ernst appointed chairman, to be aided by Bruce Swope and Newby Green. Mr. Ernst will work with the fine paper group, Mr. Swope with the twine and cord group, and Mr. Green with the coarse paper group. Russell Attridge was re-appointed sergeant at arms. And a committee was appointed to appear at a forthcoming city cartage hearing before the state railroad commission. This committee is composed of Frank Gladden, chairman; Kenneth Ross and Newby Green.

Tentative calendar for the year, with no definite dates set, was announced as follows: June—evening meeting and dinner, July — luncheon and business meeting, August—picnic, September—luncheon and business meeting, October—Hi-Jinks, November—evening meeting and dinner, December—annual Christmas party, January—dividend meeting, February—luncheon and business meeting, March—luncheon and business meeting, and April—annual election and dinner.

The club will send its committee to the state railroad commission hearing June 15. A sharp rise in city cartage rates has brought about the hearing and all efforts are being made to gain an adjustment on this.

Attendance at the luncheon was twenty-five. Plans laid for the coming year indicate the organization will have as active and productive a year as ever before. Many new features were discussed which will bring all members into more active participation.

Taylor Missed Del Monte Meet

●Stanley Taylor of the Honolulu Paper Co. came to the mainland to attend the Pacific Coast Paper Conference meeting at Del Monte in May and was on the program. He got as far as San Francisco and took ill and did not make Del Monte. He was confined to his hotel room for a few days but recovered soon.

Tea Balls of Parchment Paper

● A tea ball, or rather a tea envelope, of paper has recently been introduced on the market by one of the largest distributors of tea, Standard Brands. Their Tender Leaf Tea is now packed in perforated Patapar parchment envelopes made by the Paterson Parchment Company of Bristol, Pennsylvania. Paterson operates a large converting plant in San Francisco to serve the western states.

The new tea package has been introduced in Providence and in Philadelphia so far but will soon be available throughout the country. Standard Brands are reported to control the production of this tea envelope for the United States and Canada.

Edward Smith Famous Numismatist

● Unknown to the many members of the Paper Mill Men's Club of Southern California, Edward N. Smith, second president of the group, has built up as a hobby one of the finest coin collections in the United States. For the past twelve years Mr. Smith has been interested in numismatics, as the professionals call it, and has now a fine collection of United States uncirculated and proof coins. A proof coin can be placed under a microscope and will show no slight blemish or scratch. One of the parts of the collection of which he is produest is his complete set of all commemorative coins struck off by the U. S. Mint. He has cmplete sets of pennies, nickels, dimes and all of the smaller denominations. He also has a complete set of dollars. One of his rarest coins is the Flying Eagle penny of 1856.

Pilz Injures Ankle Oddly

● W. J. Pilz, vice-president and general manager of the Everett Pulp & Paper Co., Everett, broke a bone in his ankle recently and had to wear his foot in a cast for three weeks.

Believe it or not, he did it playing dominoes, says J. L. Murray, San Francisco, sales manager of the company

Mr. Pilz was playing dominoes at his club and sitting with his feet crossed. He received a call to the telephone and, one foot probably being asleep, stumbled as he arose from his seat and the fracture resulted.

Cook Over From Hawaii

Edric Cook, paper buyer for Theo. H. Davies & Co., Honolulu, was a Pacific Coast visitor in June.

Budge Transferred To San Francisco

● R. D. Budge has been transferred from Seattle to the Zellerbach Paper Co. headquarters staff at San Francisco to assist L. J. McGrath in the wrapping paper purchasing department. Robert Murray of the Yakima branch has been transferred to Seattle to replace Mr. Budge.

Bishop Visits Green Bay

● H. O. Bishop, representative of the Straubel Paper Co of Green Bay, Wisconsin, left June 2 for Green Bay where he will visit his home office for a two weeks conference.

Glass Organizes New Company

● C. E. Glass, formerly head of the Glass Sales Agency, has set up the Mill Agents & Distributors, Inc., in the Financial Center Building, Oakland, to handle sales of coarse paper. Donald M. Murphy is sales manager.

Horton Wins 25-Year Pin

● A 25-year service pin was awarded recently by President Harold L. Zellerbach of Zellerbach Paper Co. to Norman V. Horton, manager of the company's stationery department in Los Angeles.

Reid Sets Up Sales Agency

Ralph F. Reid, formerly of the Glass Sales Agency, has established the Syndicate Sales Agency in the Equitable Building, Oakland, to handle paper sales.

Finns Offer Aluminum Lined Cartons

● At the Spring Fair held in Helsingfors, Finland, one exhibit was of aluminum lined cardboard cartons made by Enso Gutzeit, O. Y. The aluminum foil lining permits the shipping of greasy materials or of products from which moisture must be kept. It is said to work equally well in retaining moisture.

Jordan Returns To Everett

A. H. B. Jordan, president of the Everett Pulp & Paper Co., has returned to Everett from his annual winter vacation to his place at Nokomis, Florida.

German Production, Consumption of Paper

One of the remarkable developments in Germany in recent years has been the greatly increased consumption of paper with its accompanying increase in domestic production. This rise in consumption has been largely due to the execution of the Four Year Plan and other Government measures for the control of industrial production, distribution and consumption in Germany, in turn necessitating the organization of numerous new Government and quasi-public offices, which use huge quantities of paper in correspondence, in keeping of records, and for printing innumerable circulars and forms.

German paper production increased from 2,500,000 to 2,800,000 metric tons, or by about 12 per cent, during the year 1937; and the production of cardboard increased from 628,000 to 733,000 metric tons during the same period. German paper production in 1937 was more than 50 per cent larger than in 1932 (when production was at its lowest level) and even exceeded the 1929 figure, when paper production was at its highest point, and when paper manufacturers could meet the demand only by establishing a quota system for their customers.

The development, however, has not been uniform for all classes of paper. Thus the consumption of newsprint paper and of cheap packing paper in Germany was less in 1937 than in 1936. The reduced consumption of paper for the publication of newspapers was due to the compulsory 10 per cent reduction in volume of every newspaper. In packing paper the sales of the higher grades have increased at the expense of the lower grades.

In the German manufacture of paper the number of employed workers increased 9 per cent from 1936 to 1937. The average working day has only slightly changed, namely from 8.15 to 8.25 hours per day. A further increase in the working hours is hardly possible in the paper industry, where the daily work is already in three shifts.

The execution of individual orders varied greatly in the respective plants. In 1937 some manufacturing had sufficient production capacity to supply their customers to about the same extent as in 1936. Other manufacturers, however, in order to increase their exports, had to cut down considerably the quotas available for their old customers. In view of the increased demand for paper, manufacturers' stocks were greatly reduced.

The increased ,foreign demand for chemical pulp and paper has resulted in considerably higher world market prices. In consequence German paper manufacturers increased their exports in 1937 over 1936.

The increased paper production in Germany has of course resulted in correspondingly greater demand for pulpwood. While formerly up to 70 per cent of the pulpwood used in German paper manufacture was imported, more domestic pulpwood is now used than imported pulpwood. The increased demand for domestic wood was partly covered in 1937 by felling fir trees in excess of the annual replacement by growth. However, as even the increased quantities of fir pulpwood were not sufficient to cover the requirements of the German paper industry, domestic pine and beech wood were also largely used. The former technical difficulties in using pine and beech in the production of paper have been generally overcome. The average prices of domestic wood increased 30 to 40 per cent during the year 1937. The prices of straw, which is likewise used in paper production, increased from RM 2.46 in July, 1936, to RM 2.82 in July, 1937. (Reichsmark—$.4018 United States currency), for 100 kilograms (kilogram—2,2046 pounds). (American Consulate, Leipzig).

Austrian Production Added to Germany's

It is estimated by the Svensk Pappermasse-Tidning that the merging of the Austrian pulp and paper industries into the German organizations means that the German production of chemical pulp has been increased by almost 300,000 metric tons. The writer goes on to say that about 25,000 tons of this will be sulphate pulp and 10,000 tons rayon pulp. The balance of 265,000 tons of sulphite pulp will be distributed: 115,000 tons to the Austrian paper mills, and 150,000 tons for export. Austria has also produced about 90,000 tons of mechanical pulp per annum of which about 15,000 are exported. It is suggested that the increasing absorption of German production of sulphite pulp into the German rayon and fibre industries gives ground for hopes that German competition in the export markets will become less keen. The development of this situation is, of course, of direct interest to the Swedish producers. (Office of the American Commercial Attache, Stockholm.)

Canadian Four Months Pulp Exports Down 40%

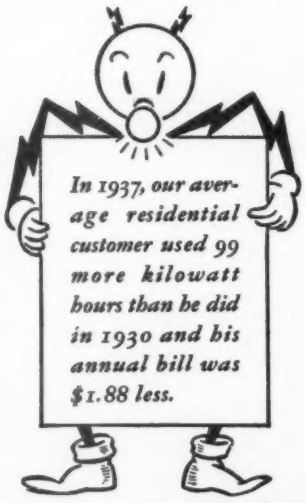
● Along with the world-wide shrinkage of wood pulp production exports and imports, the wood pulp exports from Canada for the first four months declined 40.4% as compared with the first four months of 1937.

Total wood pulp exports from Canada, chemical and mechanical, during the first four months of this year amounted to 164,782 short tons valued at $9,252,611, a decline of 111,740 tons from the total of 276,522 tons valued at $12,112,948 exported in the comparable 1937 period.

April exports of wood pulp from Canada were very low, amounting to but 32,589 short tons of all classes valued at $1,813,017. These figures compared with the 50,486 short tons valued at $2,899,451 in March of this year, and with 60,567 tons, valued at $2,817,801, in April last year. The April, 1938, exports were the smallest of any month in three years.

● The United States took 26,482 tons of a value of $1,292,833 in April of this year, while in March buyers in this country imported 37,280 tons valued at $1,922,226.

Washington needs PUGET POWER FOR LOW RATES



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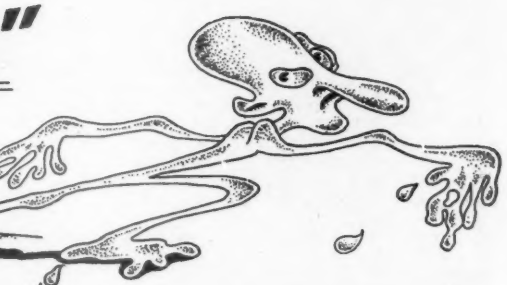

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Stock losses—bacterial decomposition and reworking of stock
Lowered Quality—slime spots—pin holes—objectionable odors
Increased Costs—in water—heat—labor—chemicals
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Obstruction of Lines—stock and white water lines
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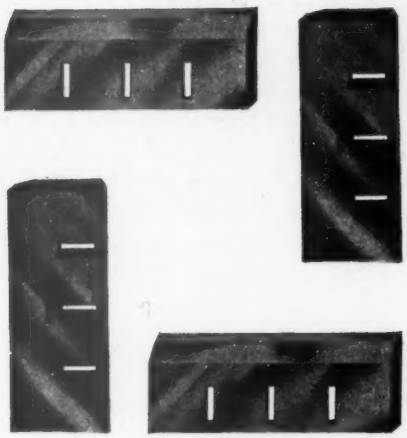

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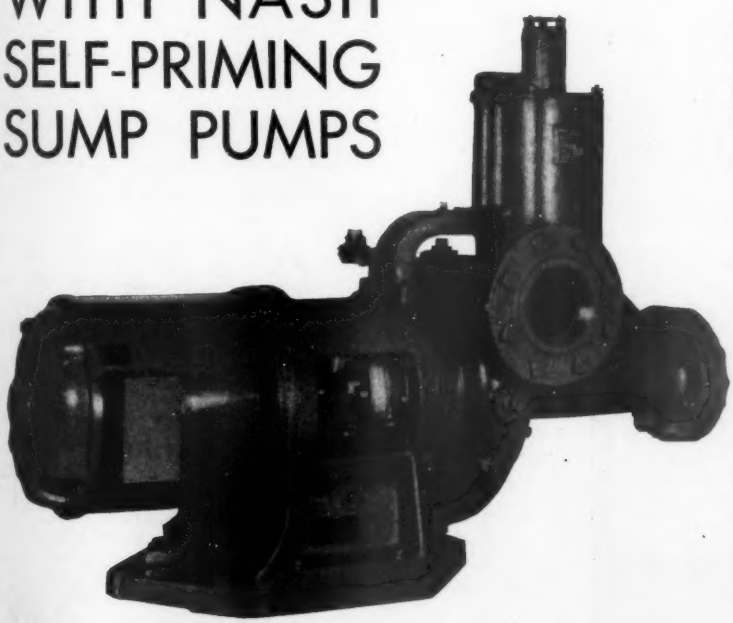

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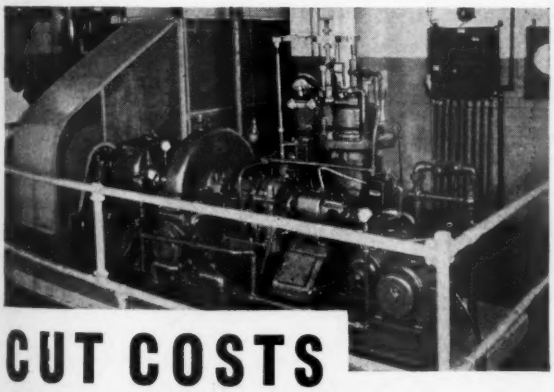

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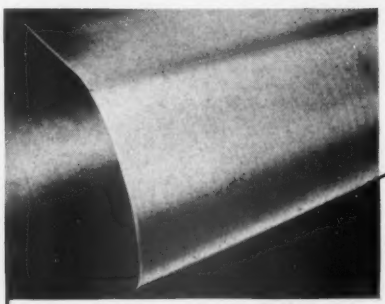

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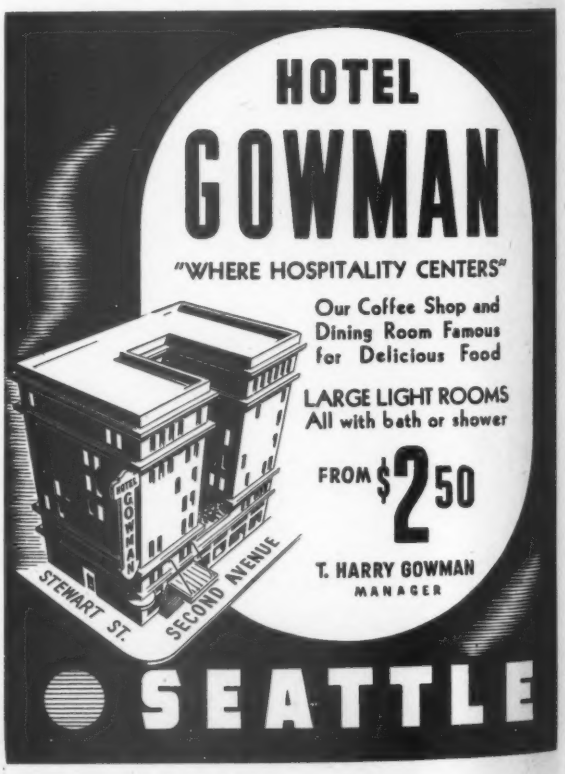

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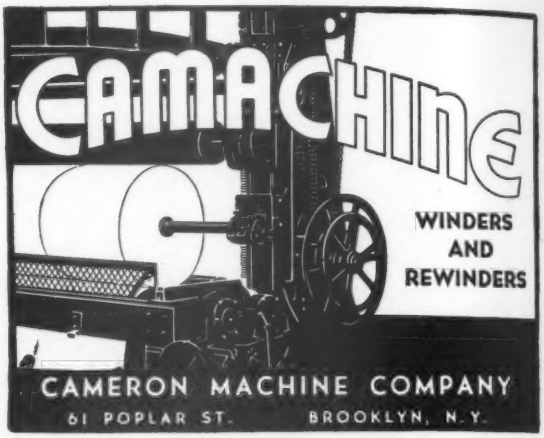

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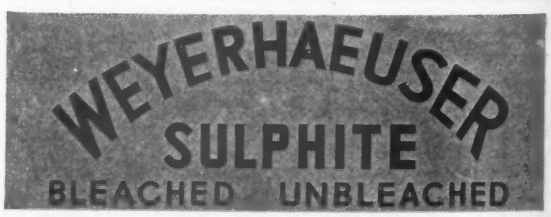

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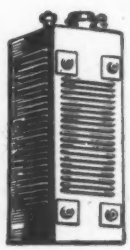

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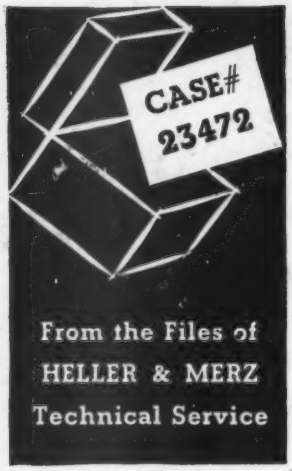

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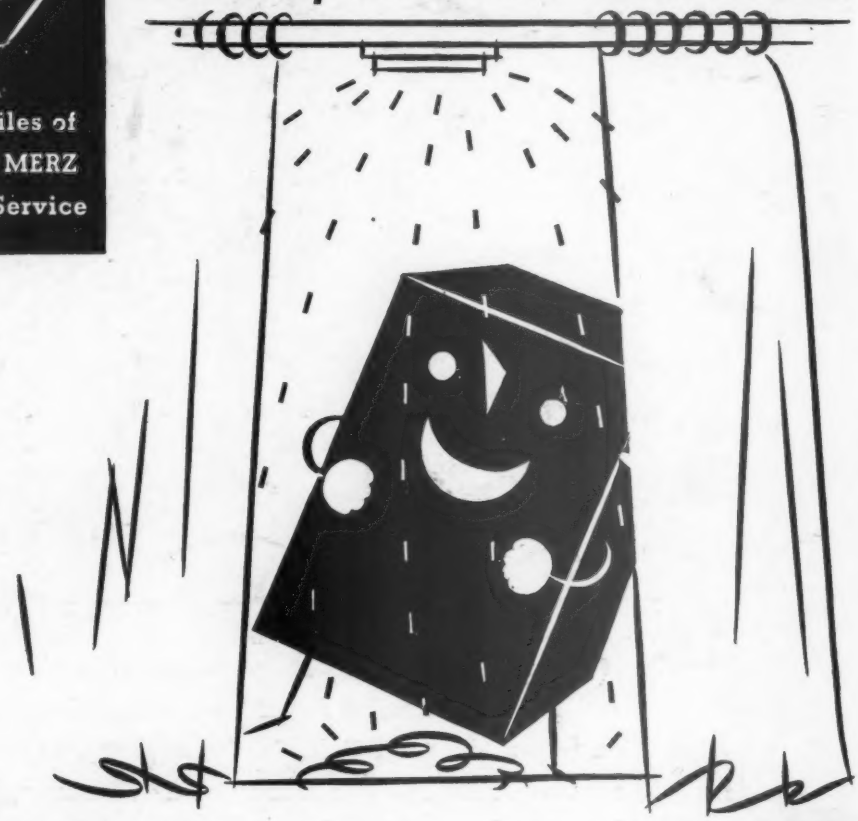

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